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An Empirical Study on Real Estate FDI Determinants in the Philippines

KATRINA FERIZ BAGUISI (122539)

YING LIN (124734)

International Business

MSc in Economics and Business Administration

Supervisor: Ari Kokko

Department of International Economics, Governance and Business

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Table of Contents

List of Figures 3

List of Tables 4

Abstract 5

1. Introduction 6

1.1 Purpose and Significance of the Study 9

1.2 Scope and Limitations 9

1.3 Structure 9

2. The Philippine Economy 10

2.1 Key Sectors 13

2.1.1 IT-BPM 14

2.1.2 Tourism 16

2.1.3 POGO 17

2.2 Demographics 17

3. Real Estate Industry Overview 20

3.1 Market Segments 24

3.1.1 Residential Market 24

3.1.2 Office Market 26

3.1.3 Retail Market 29

4. Foreign Direct Investment in the Philippines 32

4.1 Policies toward Real Estate FDI 36

4.2 Entry Modes 37

5. Literature Review 38

5.1 Theoretical Background 38

5.1.1 Internationalization Theory 38

5.1.2 The Eclectic Paradigm 39

5.1.3 Four Main Types of FDI 40

5.2 FDI Literature 40

5.2.1 General FDI Determinants 40

5.2.2 Risk and Uncertainty 42

5.2.3 Spillover Effects 43

5.2.4 Philippine FDI 45

5.3 FDI in Real Estate 47

5.3.1 Real Estate FDI determinants 47

5.3.2 Risk and Uncertainty 49

5.3.3 The Effects of FDI in Real Estate 50

6. Research Design and Methodology 52

6.1 Quantitative Analysis 52

6.2 Methodology 55

6.2.1 Data Analysis and Estimation Techniques 58

7. Data and Variables 63

7.1 Dependent Variables **63**
7.2 FDI Determinants **63**
7.2.1 Market Size 63
7.2.2 Economic Stability 64
7.2.3 Labor Cost 64
7.2.4 Degree of Openness 65
7.2.5 Tax Rate 65
7.2.6 Political Risk 66
7.2.7 Infrastructure Quality 66
7.3 Real Estate FDI Determinants **67**
7.3.1 Market Size 67
7.3.2 Transparency 68
7.3.3 Infrastructure Quality 68
7.3.4 FDI in other sectors 69
7.3.5 FDI in real estate sector 69
7.3.6 Property Price 70
7.3.7 Financing Cost 70
7.3.8 Tourist Arrivals 71
7.3.9 Overseas Filipino Workers' Remittances 72
7.3.10 Business Process Outsourcing Sector Growth 72
8. Analysis of Data and Interpretation of Results ***74***
8.1 General Description of Data **74**
8.2 Empirical Results **78**
8.2.1 A Model of FDI in the Philippines 79
8.2.2 Models of Real Estate FDI in the Philippines 84
9. Discussion ***107***
10. Conclusion ***115***
11. Recommendations for Further Studies ***118***
12. Bibliography ***120***
13. Appendix ***135***
13.1 List of Abbreviations **135**

List of Figures

Figure 1: Annual percentage growth rate of GDP based on constant 2010 US$ 6
Figure 2: Foreign Direct Investment, net inflows (BoP, current US$)....6
Figure 3: Net FDI Inflows in Real Estate Sector (US$ million)....8
Figure 4: Philippines Economic Performance against the whole ASEAN's (YoY Growth Rates) 10
Figure 5: Philippine Nominal and Real GDP 10
Figure 6: Consumer Price Index YoY Growth 11
Figure 7: Share of OFW Remittances and FDI to GDP 11
Figure 8: Infrastructure Spending (% share of GDP) 13
Figure 9: GDP share by Industrial Origin....14
Figure 10: Key Global IT-BPM Players....14
Figure 11: Philippine IT-BPM Services Market Growth 15
Figure 12: Total Tourists Arrivals 16
Figure 13: Comparative Daily Wages in Selected Countries (US$) 18
Figure 14: Remittances from Overseas Filipino Workers (OFWs) 19
Figure 15: Gross Value Added in Real Estate and Ownership of Dwellings (PHP million) 21
Figure 16: Quarterly Indices on Gross Revenue of Real Estate (Current Prices) 21
Figure 17: Residential Real Estate Price Index YoY Growth Rate 24
Figure 18: PwC's Asia Pacific Investment Prospects Ranking 2018 25
Figure 19: Comparison of New Office Supply in Asia Prime Market 2019 Q4 (million sqm)....26
Figure 20: Comparison of Vacancy Rates in Asia Prime Office Market 2019 Q4 27
Figure 21: Comparison of Rent in Asia Prime Office Market 2019 Q4 (US$/sqm/month)....27
Figure 22: Philippine Office Supply Pipeline (sqm thousands) 28
Figure 23: Total Office Transactions....28
Figure 24: Retail Supply....30
Figure 25: Retail Tenancy Mix in 2017....31
Figure 26: Expected Tenancy Mix by 2021 31
Figure 27: Total Approved Investments....32
Figure 28: Total Approved FDI by Country of Investor 2019Q4 33
Figure 29: Total Net FDI Inflows of Real Estate and IT-BPM (US$ million)....34
Figure 30: Net FDI Inflows by Country of Investor in 2019....34
Figure 31: Total Investment Pledge by Country of Investor 35
Figure 32: Actual Investment by Country of Investor....35
Figure 33: Total Investment Pledge by Sector 36
Figure 34: Actual Investment by Sector 36
Figure 35: Road Map of Analytical and Estimation Methods....57

List of Tables

Table 1: Summary Statistics 74
Table 2: Matrix of Correlations (Equation 1) 75
Table 3: Matrix of Correlations (Equation 2) 75
Table 4: Matrix of Correlations (Equation 3 and Equation 4) 76
Table 5: Unit Root Tests 78
Table 6: Regression Results 79
Table 7: Information Criteria Test 81
Table 8: Validity Test Results 81
Table 9: Lag selection 81
Table 10: Johansen Tests for Cointegration 81
Table 11: Vector Error Correction Models (Sample 1991-2018) 82
Table 12: VECM Diagnostic Tests 84
Table 13: Regression results 85
Table 14: Information Criteria Test 86
Table 15: Validity Test Results 86
Table 16: Lag Selection 87
Table 17: Granger causality Wald tests 87
Table 18: Regression results 89
Table 19: Information Criteria Test 91
Table 20: Validity Test Results 91
Table 21:Lag Selection 91
Table 22: Regression Results 93
Table 23: Regression Results 94
Table 24: Information Criteria Test 95
Table 25: Validity Test Results 96
Table 26: Variance Table 97
Table 27: Summary statistics 98
Table 28: Matrix of Correlations 99
Table 29: Unit Root Tests 100
Table 30: Regression Results 101
Table 31: Information Criteria Test 103
Table 32: Validity Test Results 103
Table 33: Annual Estimates vs Quarterly Estimates 104
Table 34: Granger Causality Wald Tests 105
Table 35: Summary of Best-Fitting Models 106

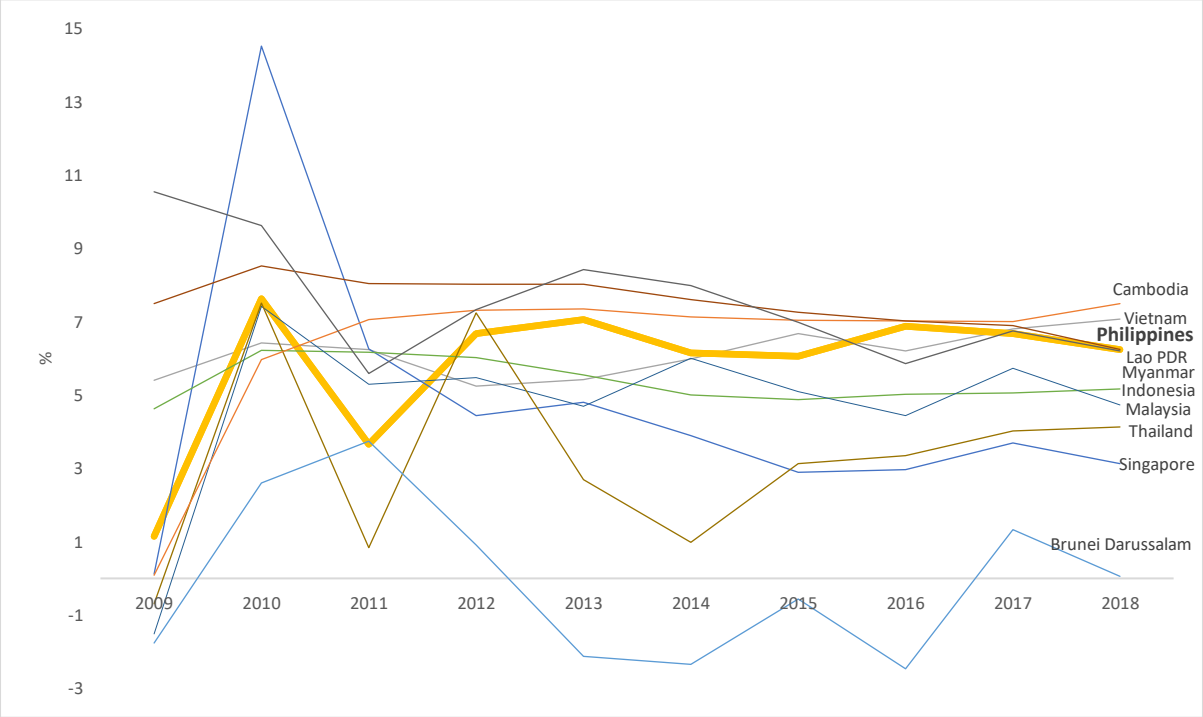
Abstract

This paper aims to examine the influential factors that attract foreign direct investment to the Philippines within the time period of 2005-2019, particularly in the real estate sector. Multiple regression analysis was utilized to estimate the underlying relationships of selected determinants on real estate FDI. Vector correction models (VEC) were developed to analyse the identified cointegrating relationships, while vector autoregression (VAR) was employed to understand short-run causalities. The empirical findings show that labor costs, infrastructure quality, and GDP per capita have positive effect on total FDI flows. In addition, trade openness appears to have long-run equilibrium relationship with total FDI flows. More importantly, this study reveals that traditional FDI factors are still applicable in determining the levels of real estate FDI flows, while real estate FDI determinants examined by past empirical studies are inadequate in explaining the significant factors in attracting these foreign real estate investments in the Philippines. Thus, the findings of the real estate FDI models imply that as population, house price, infrastructure and interest rates increase, higher levels of real estate FDI will flow into the Philippines, whereas an increase in corruption, FDI in other sectors and FDI in real estate will have the opposite effect. Moreover, Granger Causality test indicates a bilateral causality relationship among the variables: real estate FDI, tourists, and house price. We also extend the current empirical models by providing evidence of the impact of two new determinants: BPO sector and OFW remittances by which they are unique in the context of the Philippines. Surprisingly, they turned out to be negative, but significant.

1. Introduction

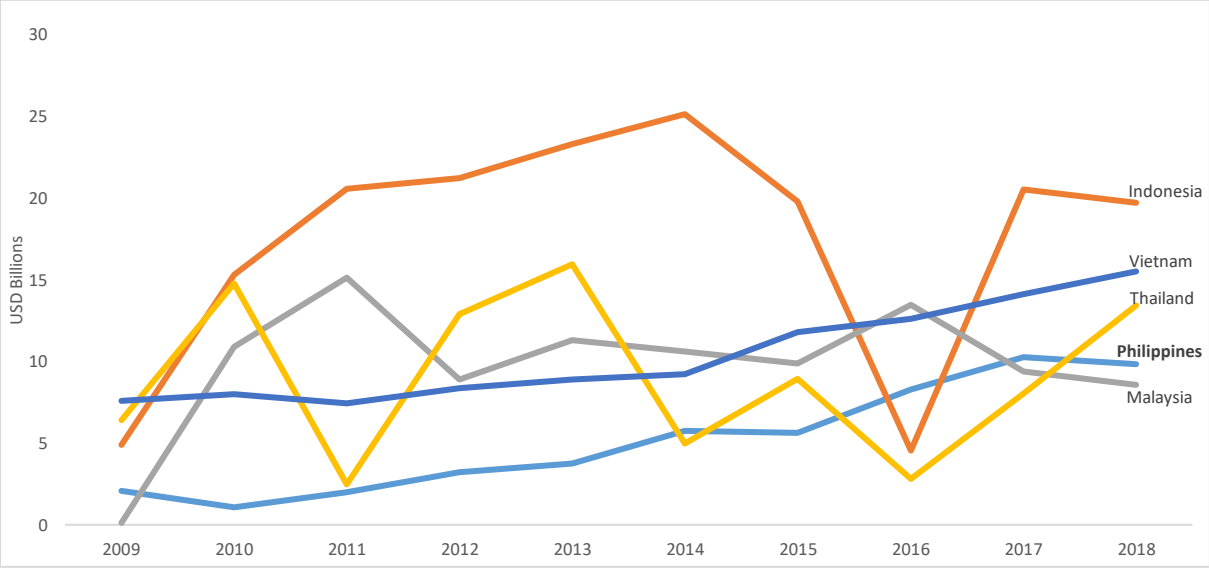
Last December 2019, the House of the Representatives committee approved the proposed rewriting of certain economic provisions in the 1987 Constitution of the Republic of the Philippines, including the amendment that will increase foreign ownership of land and business in the country (Diaz, 2019). Despite being one of ASEAN's strongest performers, in which it consistently recorded a GDP growth above 6% since 2014, it has been lagging in terms of attracting foreign direct investments (FDI).

Figure 1: Annual percentage growth rate of GDP based on constant 2010 US$



Source: World Bank

Figure 2: Foreign Direct Investment, net inflows (BoP, current US$)



Source: World Bank

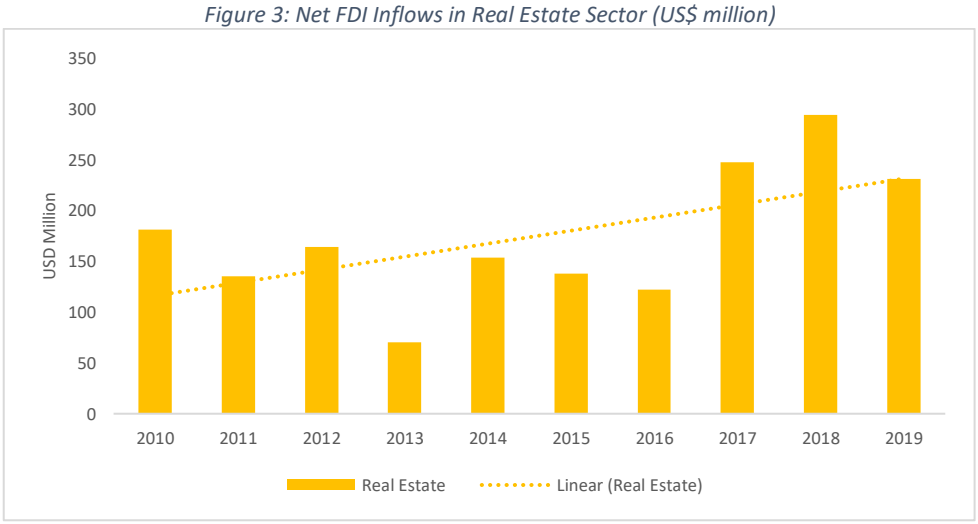
Therefore, the proposed amendment is aimed to reduce restrictions in foreign investments and create a more vibrant investment climate which will, in turn, generate more employment for Filipinos. It would also help speed up the government's infrastructure projects specifically aimed at making the country even more conducive to new businesses and employment.

Although the present restrictions on foreign land ownership would be retained, the Congress is authorized to pass a law in the future, either to relax or remove such limitations (Diaz, 2019). This has sparked a dialogue and made some personalities in the country concerned enough to make an appeal to the legislators asking them to cautiously reconsider any proposal allowing foreign ownership of land (Tort, 2018). While foreign ownership can be a major incentive for foreign investors, they may crowd out Filipinos who are striving to own land and properties for themselves, and at the same time, the needs of industrial and businesses may be given a higher priority over farming and housing for the poor (Tort, 2018). Plus, it remains a fact that even if foreigners are permitted to own land, they can never take it back home. Therefore, they would have enough incentive to invest and make it productive and profitable, which subsequently creates spillovers to the economy such as employment, higher tax collections, and may lift many Filipinos out of poverty. Moreover, even without ownership over land or having limited ownership of a condominium project, there are still many foreign companies that found a way to enter the market by establishing partnerships with local companies in real estate development (Tort, 2018).

Throughout the last three decades, the Philippines has experienced dramatic changes in its real estate sector, which manifested in its boom and bust cycles, and the entry of more players. The liberalization of selected industries such as telecommunications under the Ramos administration led to the expansion and entry of more firms, which had a positive effect on office space absorption (Agosto, 2019). Although the Philippines' property sector appears to be highly cyclical and susceptible to periods of expansion and price corrections due to excessive speculation and overinvestment of those who are responding to unsustainable demand levels, it is difficult to ignore its growth since the early 2000s that is primarily driven by rising household incomes and unmet demand for housing. This extended boom of almost 17 years is said to be driven by low interest rates and steady increase in remittances from overseas Filipino workers (OFW), which also appears to be the key drivers of the real estate industry (Agosto, 2019) as OFWs usually purchase condominiums for their children and their own retirement. In addition, low-to-middle income Filipinos who are the biggest beneficiary of the business process outsourcing (BPO) industry boom also drive the demand for real estate (Camba, 2018). Therefore, the current demand for housing is fueled by the end user who now has the means to purchase a property rather than engage in speculative buying (Remo, 2017). This can be explained by the continued growth of housing prices in the country, in which the residential real estate price index increased by 6% in 2019 compared to a 2.9% increase in 2018 (BSP, n.d.). Consequently, this has attracted many developers, both local and foreign, to enter the market and capitalize on this growing demand and increasing

purchasing power. For instance, more office buildings were built for the emerging BPO industry to house mainly call centers as well as more residential buildings were constructed to meet the demands of BPO employees and OFWs. According to Global Property Guide's investment ratings (n.d.), the Philippines ranked first among the twelve fastest-growing countries in Asia, as the country offers the highest gross rental yield per annum at 6.13%. Moreover, as there is an apparent interplay between economic growth and the stages of real estate cycles (Agosto, 2019), the outlook for Philippine real estate sector remains positive because of the country's robust economic growth supported by strong private consumption, which is boosted by low unemployment rate and inflation; increase in domestic investments that are being driven by major public infrastructure projects; and continued growth in services and industry (ADB, 2019).

Figure 3: Net FDI Inflows in Real Estate Sector (US$ million)



Source: Bangko Sentral ng Pilipinas

Furthermore, net FDI inflows in the real estate industry have also been increasing since 2010, with an average year-on-year growth of 15% (BSP, 2019 A), we believe that the factors discussed above do have a significant influence on the impressively high levels of FDI. Unfortunately, literature on real estate FDI as well as on Philippine FDI remains limited that the models presented in the existing papers seem to be insufficient in explaining these relationships in the Philippine context.

More importantly, as there is an urgent need to fully understand this extended boom in real estate market as much as to maintain and prolong it, and especially when there is an ongoing nationwide debate concerning the easing of foreign restrictions to attract more FDI and the risk of pricing Filipinos out of the real estate market, an analysis on the determinants of FDI in real estate is timely and particularly needed today to shed some light on this phenomenon hence, giving rise to this study.

1.1 Purpose and Significance of the Study

Based on our literature research, real estate FDI studies are either based on a single country or a group of countries, in which the Philippines is included in a very few studies concerning ASEAN countries or developing countries. Therefore, this study aims to fill this gap and contribute to the body of real estate FDI literature.

This is the very first study that attempts to understand real estate FDI determinants in the Philippine economy. The monthly data on FDI inflows disaggregated at sector levels recorded over a historical period of 2005-2019 that is available in the Bangko Sentral ng Pilipinas (BSP) database make such a study possible. Subsequently, we would like to test the validity of the variables derived from prior research and to explore additional variables that may contribute to the thriving Philippine real estate market.

Therefore, this paper makes four contributions to the literature on FDI. First, it considers country-specific determinants that attract real estate FDI. Second, it provides empirical evidence to confirm that new theories are required to model the determinants of FDI in real estate. Third, it compares the relative importance of real estate FDI determinants versus the traditional determinants that attract manufacturing FDI. Fourth, it serves as a basis for future research in real estate FDI among developing countries, particularly as a result of the emergence of their respective service sectors such as BPO, and remittances from its workers overseas.

1.2 Scope and Limitations

This study will focus on FDI in real estate in the Philippines and its macro- and industry-level determinants. An important limitation of this paper is that the sample size is relatively small due to the absence of data in the earlier years. This may impede the generalization of the results and restrict us from testing more elaborate models. Therefore, it is highly advised to keep these limitations in mind when interpreting the results of this study.

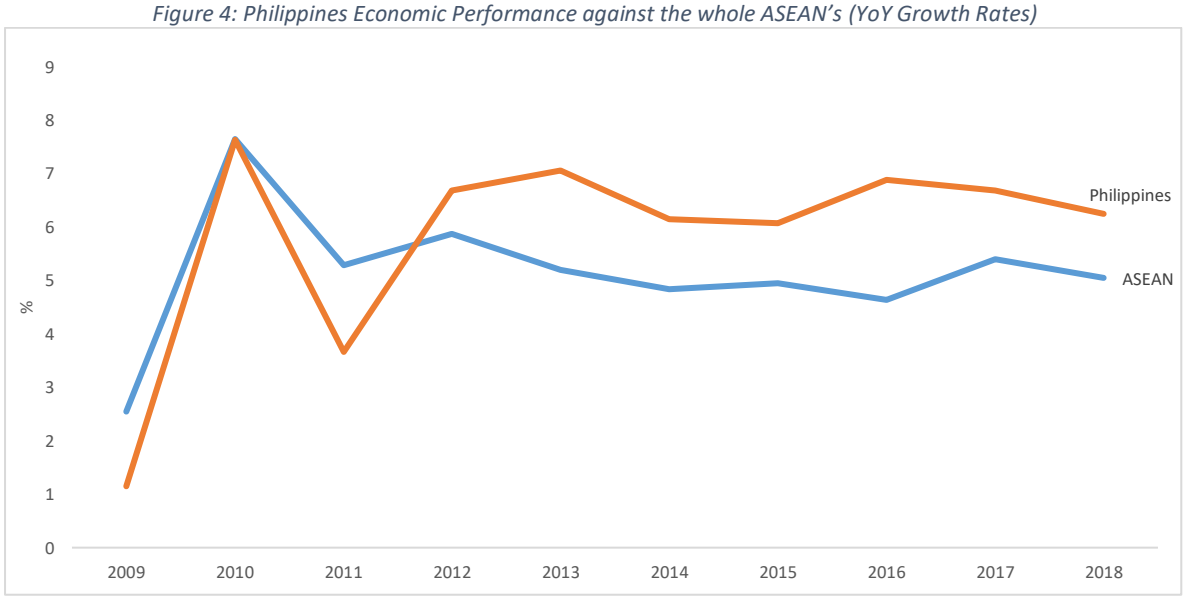
1.3 Structure

The rest of this paper is structured as follows: Section 2 describes the Philippines' macroeconomic factors and demographics. Section 3 provides an overview of the real estate industry while Section 4 discusses FDI as well as certain policies toward real estate FDI. Section 5 contains a brief discussion of the theoretical framework and summarizes some of the relevant studies and literature review. Section 6 describes the research design and outlines the estimation methodology, while Section 7 explains the variables and data sources. Section 8 presents the econometric results, which are further discussed in Section 9. Section 10 makes some concluding remarks and finally, Section 11 contains suggestions for further studies.

2. The Philippine Economy

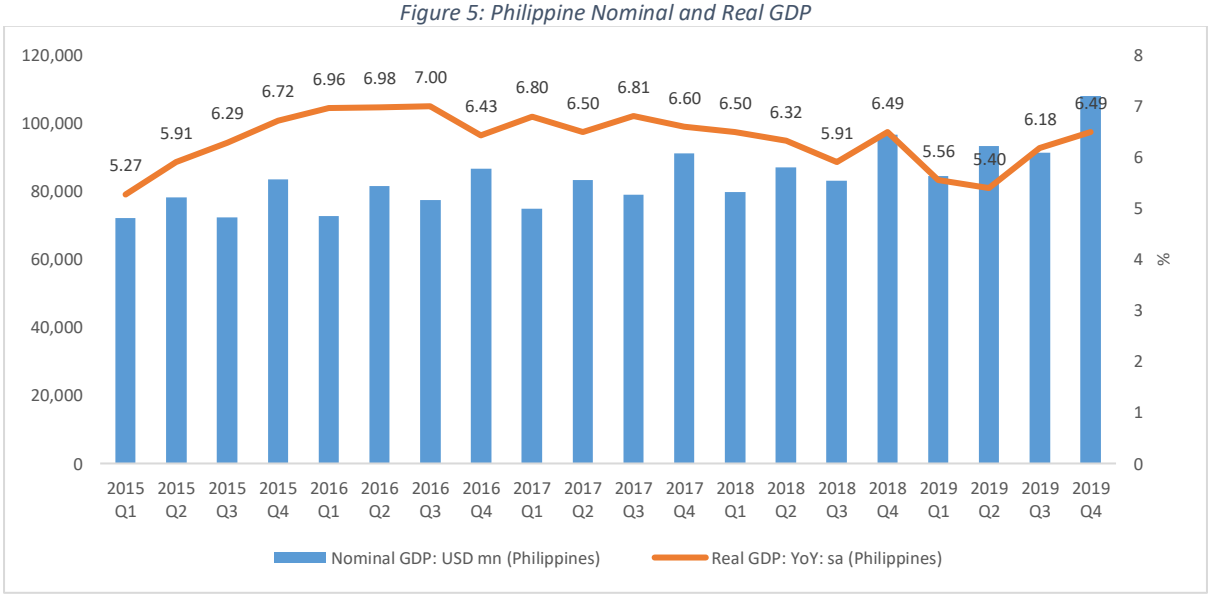
The Philippines is one of the emerging markets in Southeast Asia with a consistently strong GDP performance of 6.3% on average over the last 10 years bolstered by strong private consumption expenditures brought by its vibrant labor market and robust remittances, and continuing central government spending and fixed investment (World Bank, 2019 A).

Figure 4: Philippines Economic Performance against the whole ASEAN's (YoY Growth Rates)



Source: ASEAN Stats (Average GDP growth among 10 ASEAN nations)

Figure 5: Philippine Nominal and Real GDP

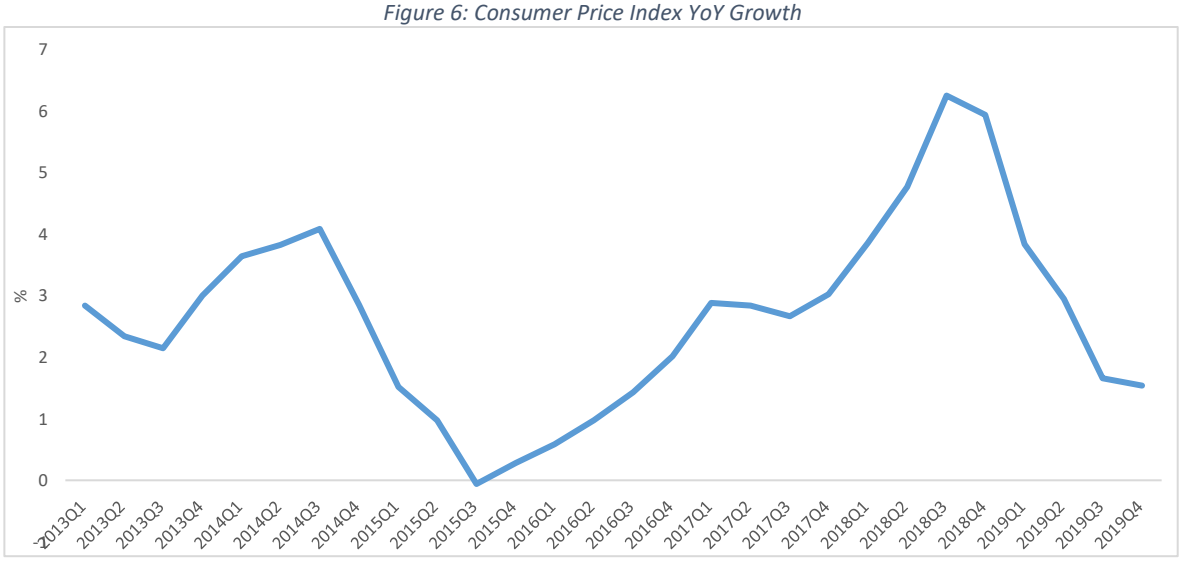


Source: CEIC

The country has also felt the impacts of weak global manufacturing activity and trade as well as the heightened uncertainty from escalating trade tensions in the past year that caused its economic growth to slow down accordingly. Meanwhile, the government's expansionary fiscal policy agenda combined with tax reform and improved tax administration together boost economic activity (World Bank, 2019 A). Tax revenue makes up about 90% of total government revenue and is projected to increase in the

following years due to improved collection rates (CEIC, 2019). Moreover, the country's level of indebtedness is relatively low while pursuing its plan to keep the deficit at 3% of GDP. To ensure economic stability, it has to minimize its exposure to foreign exchange volatilities. Therefore, it plans to follow a financing mix of 75% borrowings from domestic sources and 25% foreign (PIA, 2018). This would also aid the looming slowdown of the global economy without major disruptions. Furthermore, easing inflation does not only accelerate private consumption growth but also provides its central bank enough policy space to continue loosening monetary policy (World Bank, 2019 A).

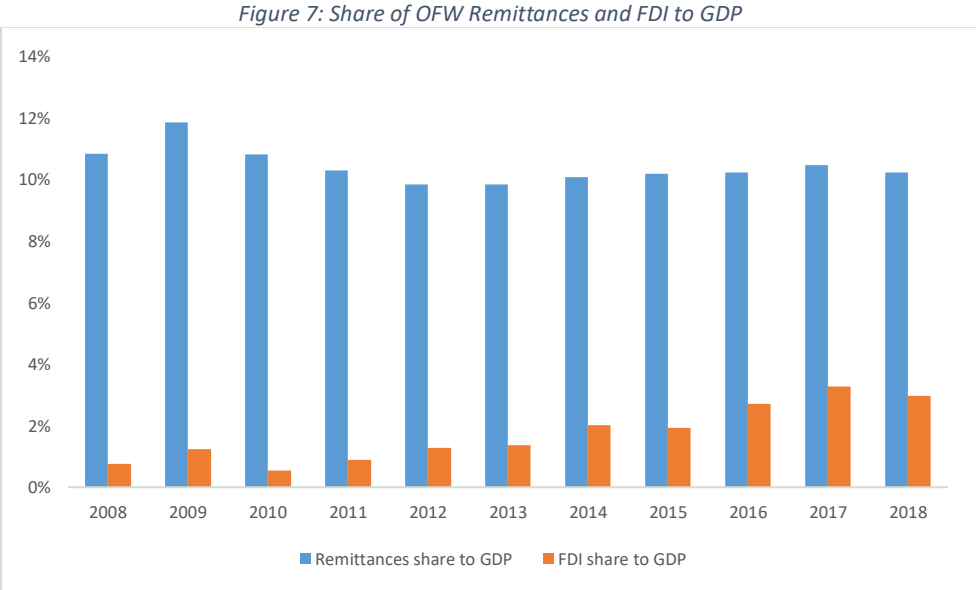
Figure 6: Consumer Price Index YoY Growth



Source: Philippine Institute for Development Studies

The large trade deficits that the country has been experiencing in the last several years was being offset by a net positive services trade balance and financed through the increasing remittances from abroad. Because of this, remittances make up a much larger share of total capital flows, which then dwarfs the share of FDI and portfolio investment.

Figure 7: Share of OFW Remittances and FDI to GDP



Sources: Euromonitor International and World Bank

Manufactured goods, mostly electronic products, make up about 60% of all exports of the Philippines, while the main import product categories are raw materials & intermediate goods, and capital goods, which then reflects its ambitions to develop its manufacturing base. Its main trade partners are China, Japan, Hong Kong, and the US (CEIC, 2019).

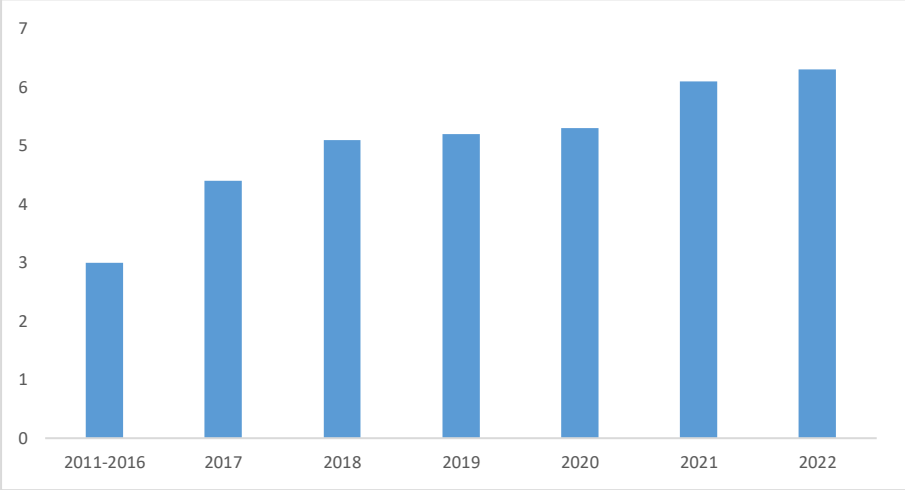
More importantly, the country's Gini coefficient, which is a measurement of economic inequality, declined from 45 in 2014 to 43 in 2019 while, the population living below the international poverty line of USD 1.90 a day decreased from 4.4% to 2.2%. Meanwhile, a large share of Filipino workers transitioned out of agriculture and entered the service sector, while unemployment has reached historic low rates (World Bank, 2019 A).

The Philippines ranked 64th in the latest Global Competitiveness Report, down from rank 56th of the previous year while highlighting the issue that the country suffers from a lack of adequate infrastructure (WEF, 2019). For instance, it is known for challenging traffic conditions, long commutes, and one of the slowest internet speeds in the region and as a result, suffers from a lack of economic productivity and quality of life. It also added that corruption is among the top problematic factors for doing business in the Philippines (PRS, 2019). The country's score in Corruption Perceptions Index declined from 36 to 34 (more corrupt) in 2019, with the rank of 113rd out of 180 countries, a drop from rank 99th of the previous year (Transparency International, 2019). This only shows that corruption is a pervasive issue in both public and private sectors. However, many changes have been put in place by the current administration to fight this long-standing problem. For example, it has streamlined government transactions, upgraded regulatory processes, and established the Presidential Complaint Center, which is a front-line desk in the Office of the President, that receives and acts on corruption complaints from the general public (PRS, 2019).

Aside from the fall in competitiveness, the country also experienced a reduced inflow of FDI, in contrast to its neighbors. Recalling Figure 2, FDI inflows to the country amount to more than one-tenth of the figure for Singapore, and almost half of the total reported by Indonesia. Therefore, to compete with its neighbors, the administration has implemented the Ease of Doing Business Law, in parallel with a one-stop window for energy projects. It also revised its negative list and made changes to public service and retail trade rules as an attempt to create more opportunities for foreign investors.

As the current administration is looking to remedy the poor budget disbursement that has been a problem for successive governments, it made infrastructure development one of its key priorities. Its "*Build Build Build"* program features 75 flagship projects that address major bottlenecks and cover everything from transportation to water resources to energy, with several departments collaborating to implement the program. To realize this, the administration has also been spending enormously on public infrastructure and recently allocated PHP1.22 trillion or almost 6% of its GDP to be spent on these implementations.

Figure 8: Infrastructure Spending (% share of GDP)



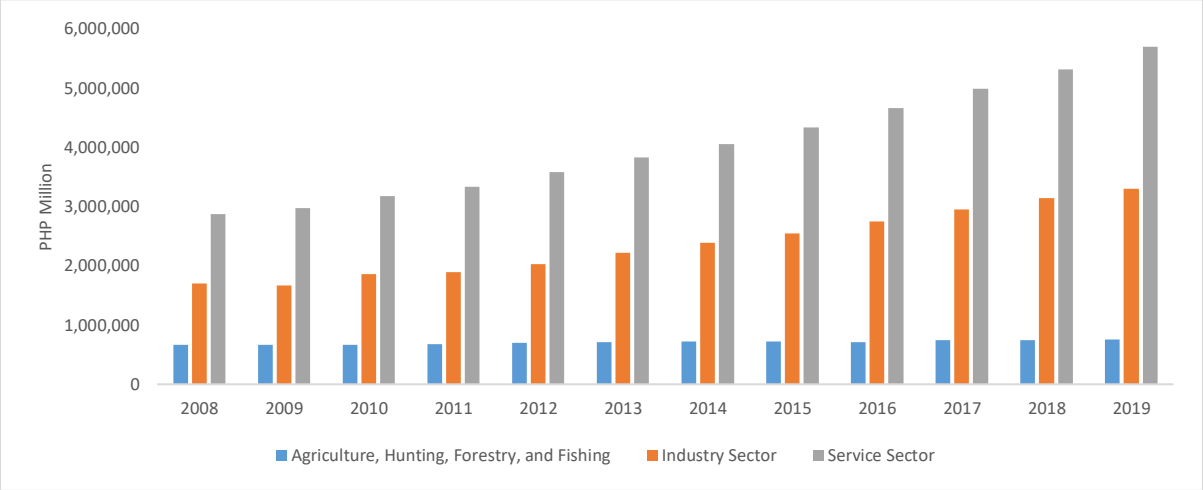
Sources: Department of Budget and Management, IMF estimates

These developments are being funded through bilateral official development assistance (ODA) loans although, the focus has now shifted to public-private partnership (PPP) schemes (EIU, 2020). This marked the Philippines' *"Golden Age of Infrastructure"*. Despite major weather-related disturbances and the need to speed up approvals for these plans to materialize, it will nevertheless increase capacity, particularly in handling the rise in tourist arrivals and provide sufficient support for the growth of the service sector (PRS, 2019).

2.1 Key Sectors

The country has been transitioning from an agricultural-based economy toward an economy focused on services and manufacturing. In 2019, the share of the service sector to GDP is 58%, while the industry sector is at 34%, and the rest comes from agriculture, hunting, forestry, and fishing sector. Manufacturing comprises more than half of the country's industrial sector and accounts for 23% of GDP in 2019. However, the country is most notable for its strong performance in the services sector, in which it grows by an average of 6.7% from 2010 to 2019, particularly in BPO, real estate, and finance and insurance industries (World Bank, 2019 A). As a result, not only the country is moving up the global value chain and becoming a regional hub in human resource development, but it is taking advantage of its unique competitive edge in the services sector, which has also created more investment opportunities for both domestic and foreign investments.

Figure 9: GDP share by Industrial Origin



Sources: Philippine Statistics Authority (2000 = 100)

This reflects the aim of the country to position itself as the core of services trade in the whole Asia-Pacific region. By doing so, it hopes to generate employment and promote economic development through foreign investments. The Board of Investments (BOI) and the Philippine Economic Zone Authority (PEZA) are the leading investment promotion agencies (IPAs) that provide incentives and special investment packages to attract foreign investors. Foreign investors in the country are given the same treatment as their local counterparts, with the exception in sectors reserved for Filipinos, while enjoying the incentives they receive from operating in free trade zones and tapping into its large, educated English-speaking, relatively low-cost Filipino workforce (PRS, 2019).

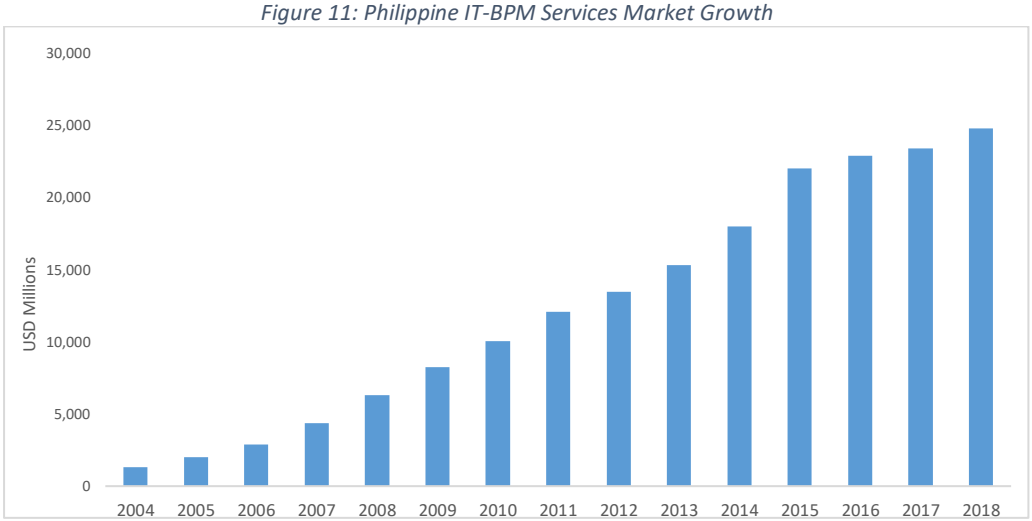
2.1.1 IT-BPM

Two decades ago, the Philippines started as an alternative Information Technology and Business Process Management (IT-BPM) destination to India and has since become a global leader and the number one destination for voice-related services, and one of the fastest-growing and employment generating activities in the country (BOI, 2018 A).

Figure 10: Key Global IT-BPM Players

Source: Board of Investments

Figure 11: Philippine IT-BPM Services Market Growth



Sources: BSP, IT & Business Process Association Philippines (IBPAP)

The country has a strong affinity to the North American market due to its cultural and historical links, making the workforce highly adaptable to Western culture. To add, the Philippines is currently the third-largest English-speaking country in the world. By leveraging these inherent advantages, the country's IT-BPM sector has grown rapidly. It has since evolved and started offering high-quality services at competitive price points while emerging countries such as Vietnam are taking its place as a low-cost hub (IBPAP, 2019).

The IT-BPM sector covers selected industries in Information and Communication and Administrative[1] and Support Service Activities[2]. The country aims to grow its capability to offer non-voice BPM and IT services, expanding in areas such as finance and accounting as well as provide vertical solutions like healthcare information services (BOI, 2018 A). Based on the latest Annual Survey of Philippine Business and Industry 2017 (ASPBI), computer programming activities contributed the highest share of 35.2% to the total number of IT-BPM establishments, followed by customer relationship management activities at 23%, which employed the highest number of workers at 67.6% and recorded the highest income of PHP307.3 billion; and sales and marketing, which includes telemarketing activities, at 9.8%. More impressively, the total compensation paid by the sector amounted to PHP261.4 billion, which translates to an average annual compensation of PHP406 thousand per employee (PSA, 2020 A).

The major players of the IT-BPM sector in the Philippines are predominantly multinational service providers with significant expansion by Indian-heritage service providers and global in-house centers (GICs). In addition, IT-BPM-related investments receive generous tax incentives such as tax holidays. To add, those companies registered in the PEZA enjoy income tax holiday for three to eight years, after

[1] Sector J of PSIC 2009
[2] Sector N of PSIC 2009

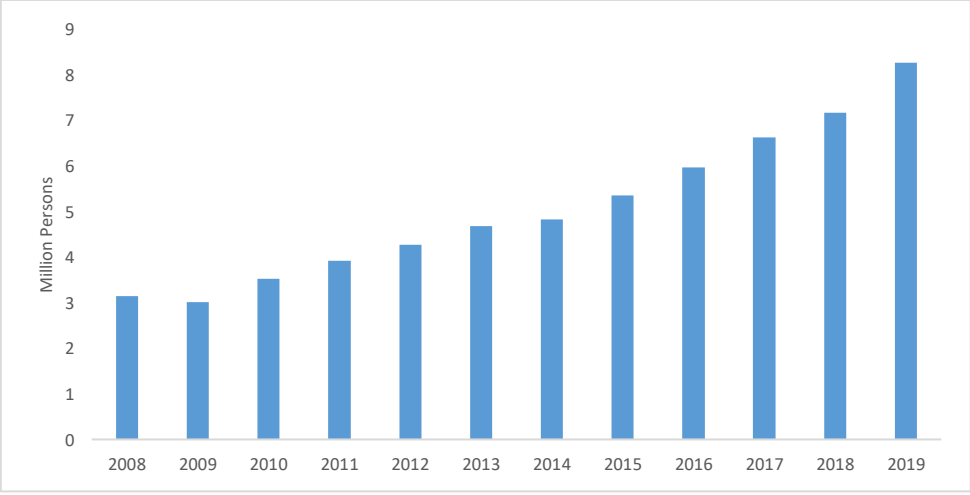
which they are subject to a 5% tax on gross income. However, to avail of these incentives, the enterprise must locate in one of the PEZA IT parks, buildings, and technology hubs (BOI, 2018 A).

2.1.2 Tourism

The Philippines boasts a wealth of ecological and cultural attractions and it has been popular for its pristine white sandy beaches, diverse marine life, forests, volcanoes, heritage sites, among many others. Owing to these natural resources, the country can offer a range of tourism services and facilities such as ecotourism sites, beach resorts, trekking, and scuba diving – a major market driver for many coastal and marine destinations, in which the country received the *"World's Leading Dive Destination"* award in 2019 (DOT, 2019).

The Philippine government recognized the importance of travel and tourism as a driver of economic growth and accordingly implemented a strategy to spread the benefits of the industry across the country (PNA, 2019 A). In 2019, the Department of Tourism (DOT) launched a refreshed branding campaign, continuing *"It's More Fun in the Philippines"* slogan with an advocacy for sustainable tourism. To complement this, a program called *"Save our Spots"* was launched to encourage the preservation of the country's natural and man-made wonders (PNA, 2020). According to World Travel & Tourism Council (WTTC), the strong growth in this industry can be attributed to the continuous rise in the number of middle-class households, solid growth in global consumer spending, low unemployment threats, currency depreciation, and visa relaxation (PNA, 2019 A).

Figure 12: Total Tourists Arrivals



Source: Department of Tourism

In 2019, the Philippines hit a new milestone of 8.26 million visitor arrivals, an increase of 15.24% from the previous year. Since 2010, Koreans have remained the top source market with a total of 1.98 million arrivals. However, China is following closely on second, with significant growth in arrivals of 38.58% compared to the previous year. Notably, only Chinese tourists have recorded one million arrivals in Ninoy Aquino International Airport (NAIA), the major gateway of the country (DOT, 2019).

The contribution of tourism industries to the Philippine economy was estimated at 12.7% in 2018, with a gross value added of PHP2.2 trillion, an increase of 14.3% from the previous year. Non-resident visitors, who are both foreign and Filipinos permanently residing abroad, spent PHP441.4 billion, during their visit to the Philippines in 2018. This inbound tourism ranked third among the biggest export items of the same year, which is an 8% share of the country's total exports. Also, tourism industries employed a total of 5.4 million workers, accounting for 13% of the total employment in the country in 2018 (PSA, 2019 A).

2.1.3 POGO

In 2016, the Philippine Amusement and Gaming Corporation (PAGCOR) started issuing offshore gaming license – may be issued to Philippine- and offshore-based operators in any foreign country, as a new source of revenue (GMA News, 2016). They are referred to as Philippine Offshore Gaming Operators (POGO). Therefore, a POGO provides games to players, taking bets, and paying the winning players, all done through the Internet. However, authorized players are only open to foreigners based in another country. Those foreign nationals staying in the Philippines, as well as Filipinos residing abroad, are not allowed to take part in any kind of online gaming activity.

Offshore gaming is one the country's fastest-growing sectors that employ not only Filipinos but also Chinese foreign workers as its growth is being supported by the exploding demand for online gambling from mainland China, where this activity is officially illegal, hence, requiring large numbers of native Mandarin speakers (Venzon, 2019).

There are currently 60 POGOs in the country, 84% of which are in the NCR, particularly in Makati and Pasay City, while more POGOs started setting shops outside the region. Moreover, the sector employed a total of 87,500 personnel, almost 57% of this number is only concentrated on 5 POGOs. To show how profitable these operations are: from January to September 2019, the total income PAGCOR collected from POGO operations amounted to PHP4.6 billion (CPBRD, 2019).

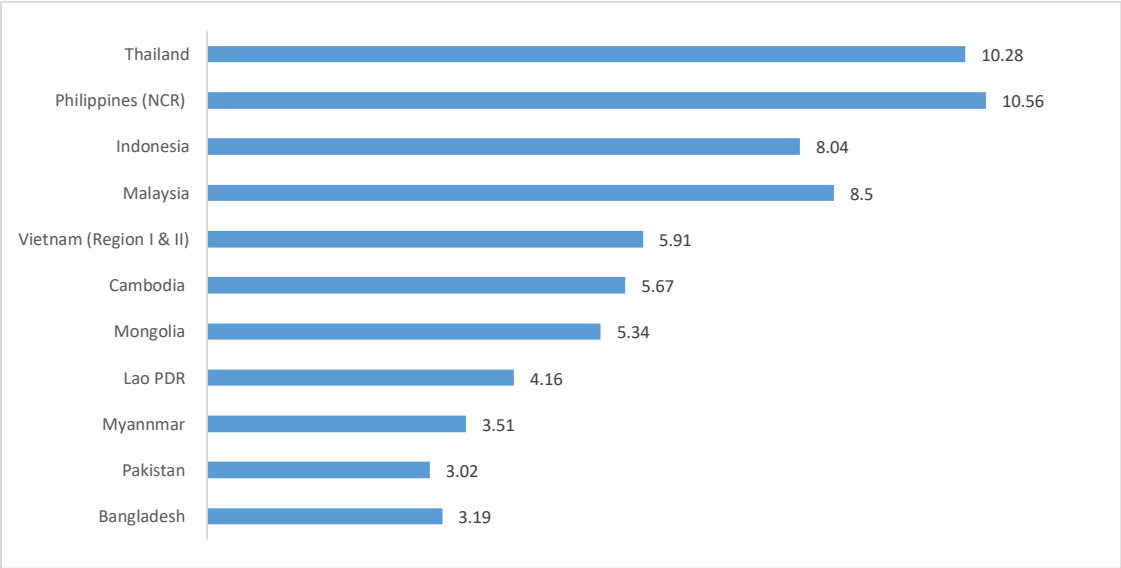
2.2 Demographics

The strength of the Philippine economy lies in strong domestic demand, supported by higher levels of investment and consumer spending. The country has a very favorable demographic profile of a healthy and growing labor force, an expanding middle class, and a young population that guarantee a sustained future consumption. Besides, it receives a strong remittance income that pushes inward investment even further.

The country is one of the youngest populations in the world, in which its median age is 24 years old (Nielsen, 2019). It has about 70 million people in the working-age, out of its total population of 108

million. The share of working people is expected to grow in the next years while the unemployment rate remains low at 5.3% in 2019 (PSA, 2020 B). Although compensation packages in the country tend to be relatively high compared with its neighboring countries, foreign investors still report local labor costs as low. For instance, the minimum daily wage in the National Capital Region (NCR)[3] increased to PHP500 in 2018 (DOLE, 2020).

Figure 13: Comparative Daily Wages in Selected Countries (US$)



Source: Department of Labor and Employment

According to CEIC (2019), the country is poised to jump from a lower-middle-income country to an upper-middle-income country in the near term, with a per capita income range of USD 3,896 – USD 12,055. Furthermore, the Philippines is experiencing an emerging middle class with a rise in spending power primarily brought by BPO workers and OFW families, whose earnings are higher than the average Filipino family (Nielsen, 2019).

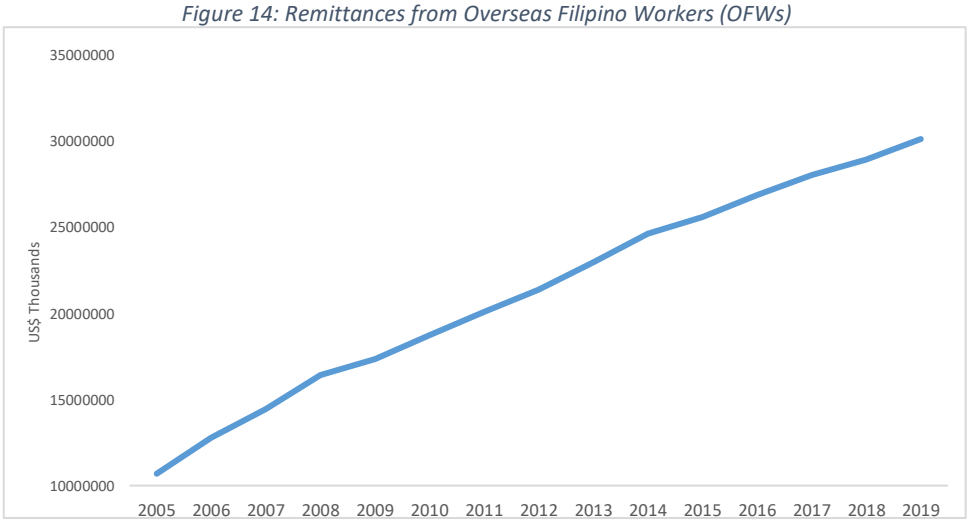
In 2019, 58.5% of the country's working population is employed in the services sector, with 22% in agriculture and the rest in industry sectors (PSA, 2020 B). Moreover, it is one of the countries in the region with the highest overall literacy rate at 96%, which is further sustained by a bill passed in 2017 guaranteeing free tertiary education in state and local universities, and colleges (PRS, 2019). The country ranks among top countries in terms of annual graduates – almost half a million college degree graduates every year, 66.6% of whom have courses suitable for the IT-BPM sector (BOI, 2018). Particularly, foreign investors regard Filipino workers as highly motivated, with generally strong English language skills (PRS, 2019). Because of these reasons, BPOs continue to open up and expand in various cities across the country, hiring 1-1.5 million workers (Nielsen, 2019).

[3] Regional Wage and Productivity Boards meet periodically in each of the country's 16 administrative regions to determine minimum wages. Most regions set their minimum wage significantly lower than Metro Manila (NCR) (PRS, 2019).

Meanwhile, OFWs account for about 10-12 million Filipinos, roughly a tenth of the country's population. Working overseas has been a way of escaping unemployment, low wages, and limited opportunities at home. One will find Filipinos working as domestic workers in Angola, construction workers in Japan, nannies in Hong Kong, singers in China, and they are even running hotels in the Middle East. It is worth noting that a quarter of the world's seafarers are Filipino. This phenomenon reshaped the education system in the country – they direct students into industries that will most likely help them land a job abroad. For instance, the country deploys 19,000 certified and language trained nurses to hospitals around the world (Almendral, 2018).

The money OFWs sent bank to their families in 2019 set a record of USD33.5 billion, which is a 3.9% increase from the previous year. These remittances boosted household income and consumption, which accounted for 9.3% of the country's GDP (BSP, 2019 B). Furthermore, it has been helping offset the widening trade gap and limiting the current account deficit by providing a steady stream of foreign exchange (Rivas, 2020). More importantly, OFW remittances have lifted a lot of poorer families out of poverty, with more houses built across the country. Because of these, OFWs are referred to as the new heroes as they sacrifice themselves for the betterment of their family and the country (Almendral, 2018).

Figure 14: Remittances from Overseas Filipino Workers (OFWs)



Source: Bangko Sentral ng Pilipinas

Together with BPO receipts, OFW remittance flows also supplement domestic wages, translating into strong purchasing power to fund household consumption and capital formation (Rivas, 2020).

3. Real Estate Industry Overview

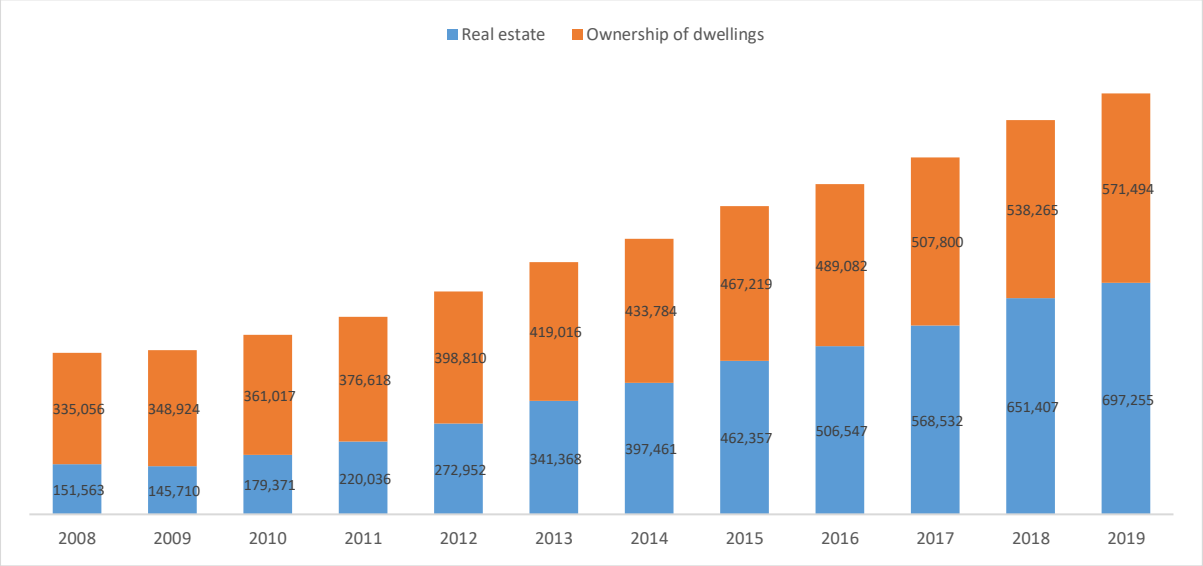
According to Villar (2019), the Philippine real estate sector closely resembles the performance of the country's economy. Along with being one of the countries in Asia that recorded the fastest growth rates, its real estate sector has become one of the most vibrant in the region, which then provides both Filipinos and foreign nationals a good investment opportunity.

The Real Estate Service Act of the Philippines defines real estate as "*the land and all those items which are attached to the land. It is the physical, tangible entity, together with the additions or improvements on, above or below the ground"*. Meanwhile, a real estate development project means the development of land for residential, commercial, industrial, agricultural, institutional, or recreational purposes (Congress, 2014).

This section will provide an overview of the real estate sector and will only include real estate activities listed in the Section L of the Philippines Standard Industrial Classification (PSIC) 2009, which is: *"the buying, selling, renting, leasing, and operating of self-owned or leased real estate such as apartment buildings, non-residential buildings, and land; and provision of homes, flats or apartments for permanent use including real estate-related services such as the appraisal or acting as escrow agents*." (NSCB, 2010). Even though this group of activities includes the development of building projects for own operation, it excludes those that are intended for sale, and operation of hotels and similar accommodation. In short, this group includes the building of structures, maintaining ownership and leasing of such structures. Kindly note that in this particular section, we will also be using the words real estate and property interchangeably.

The real estate industry has been on an upward growth trajectory over the past years owing to the healthy demand for residential and office space, supported by infrastructure development programs by the government. In 2019, it contributed 11% to the country's GDP. Additionally, the growth of the real estate sector is also reflected in the steady increase in its gross value added since 2009. According to PSA (2019 B), the gross value added in the sector was PHP281.595 billion, a 7% increase from 2018.

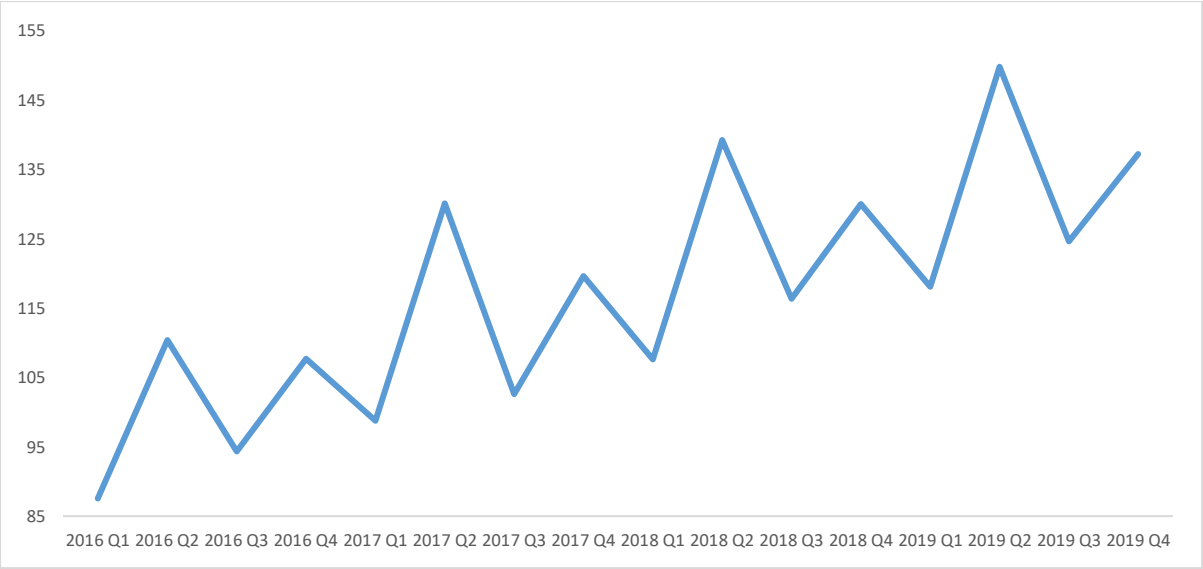
Figure 15: Gross Value Added in Real Estate and Ownership of Dwellings (PHP million)



Source: Philippine Statistics Authority (National Accounts)

Aligned with the value created in the industry is the continued increase in gross revenue, income, compensation per employee, and labor productivity. The total income generated by the industry increased by 17% at PHP675.6 billion in 2017 (PSA, 2019 C). There was also a 27% increase in gross revenue in the last quarter of 2019 compared to 2016's.

Figure 16: Quarterly Indices on Gross Revenue of Real Estate (Current Prices)



Source: Philippine Statistics Authority (2016=100)

Moreover, the latest ASPBI reported a weighted total of 9,316 establishments that were engaged in real estate activities in 2017, the majority of which are those with own or leased property, that accounted for 86.6% of the total. In addition, this industry group also employed 90.3% of the total number of workers in the industry, which is 75,230. Notably, the total compensation paid by the sector to its employees increased by 14.2% with an amount of PHP30.9 billion. This is also translated to the rise in average annual compensation per employee that was reported at PHP412.3 thousand, a 24.3% increase from the previous year (PSA, 2019 C).

The strong demand for housing properties in the Philippines is being driven by the growing incomes of Filipinos and the country's expanding and urbanizing population. According to the latest Family Income and Expenditure Survey (FIES), the annual income Filipino families earned is estimated at PHP313 thousand on average in 2018 (PSA, 2019 D), a 17% increase from the same survey done in 2015. Consequently, their annual savings and expenditures also increased. The latest Consumers Expectations Survey (CES)[4] done in the last quarter of 2019 reported that 38.4% of Filipino households intend to buy a single-detached house in the next 12 months. This rate is higher in NCR at 42.2% (BSP, 2019 C).

According to Bouwinvest (n.d), urban population growth is one of the main drivers of change in the future global real estate sector. The urban population in the Philippines is almost 47% of the total population and has been growing at an average rate of 2% for the past 10 years (World Bank, 2019 B). As this number increases, so does the demand for housing, and consequently, real estate per square meter will also continue to go up, making the market very attractive to foreign investors that are looking to capitalize on this rising demand.

Recall that OFW remittances play an important in the Philippines' economy, Asian Development Bank (ADB) stated that households receiving remittances, in general, spend less at the margin on consumption goods like food but rather spend more on investment goods such as education and housing (Ang et al., 2009). To support this, the CES reported that on average 10.6% of OFW households use remittances to purchase a house in 2019.

BPO has been dominating the demand for office spaces for the past years. However, as discussed earlier, POGOs are growing so fast that it could overtake the growth of BPO, as the largest office tenant in Metro Manila. Jones Lang LaSalle (JLL), a global financial and professional services firm specializing in real estate services and investment management, reported that the average growth rate of office take-up by POGOs since 2017 is 61% while BPOs grew at a slower rate of 36% (JLL, 2020). It was observed that it takes nine months for BPOs to take a lease, while POGOs take nine minutes (Venzon, 2019). Although this is quite an exaggeration and the government has still yet to see and factor in the full economic impact of POGOs, it is undeniable that this particular tenant group has been indeed boosting the property sector, especially in the office and residential segments since their entry in 2016. It is also important to point out that the thriving tourism sector also facilitates investment in hotels, offices, and factories.

The main infrastructure program, *"Build Build Build",* has a great effect on occupiers seeking to expand and relocate their operations across various locations in the country as it sets the direction for real estate

[4] The Consumer Expectations Survey captures the economic outlook of consumers as an indication of the country's future economic conditions.

investors and property developers who need to position themselves to capitalize on the multitude of opportunities they create (CBRE, 2019). For instance, the construction and upgrade of infrastructures such as bridges, railways, and toll roads in key areas around the country will help the country unlock land values, and in turn will attract various real estate developments in these locations (Bondoc J. , 2019 A).

To add, the government also encourages sector development through public investment programs and by offering special incentives to private investment, which will continue to draw significant interest from the private sector. According to IMF (2020), more private-sector participation could help in executing the infrastructure investment push. This collaboration has been effective as it was observed that in 2017, the growth of the construction sector was mainly driven by private investment (EMIS, 2018).

Apart from the growth drivers of the real estate market, it is also worth discussing the few factors that may inhibit its growth. First, there has been a shortage of skilled construction workers that may potentially cause delays in the launch of development projects around the country. According to the Trade Union Congress of the Philippines (TUCP), due to the low pay, meager benefits, unsafe and unhealthy working conditions, the country is losing its vast reserves of construction manpower to higher pay and attractive benefits being offered by companies abroad. Among the three million construction workers in the country, only around one million of them are certified (PNA, 2019 B).

Second, even though infrastructure has been one of the highlights of the current administration which ramped up the government's spending on infrastructure, concerns whether it can fully spend this budget are present. As a consequence, it could cause delays in the construction of vital public projects that serve as a direction to property developers' expansion strategies (Bondoc J. , 2019 A).

Third, the Philippines scored low in the Global Real Estate Transparency Index 2018 at rank 48th, indicating that the country has a semi-transparent property market, in which it needs to address issues of corporate governance and regulatory enforcement (JLL, 2018).

Fourth, ownership rules imposed on land acquisition by foreigners remain unchanged and restrictive while the country still has immature financial markets with a low-level stock of market capitalization, which could inhibit the growth of the real estate industry as it is a capital-intensive sector (EMIS, 2016).

Lastly, the inevitable slowdown in economic growth due to various global events that could impede the expansion of not only BPOs and POGOs but also traditional and non-outsourcing tenants, which would then lead to weaker demand in real estate properties. Besides, there are still lingering concerns on the sustainability of POGOs in Metro Manila due to the crackdowns on illegal activities some of their employees engage in and the increasing restrictions in the work visa issuance for its Chinese employees (Lamudi, 2020 A).

In sum, the Philippines' real estate market is highly competitive as it continues to benefit from good demand driven by the country's growing population and high urbanization as well as rising rental trends. Despite low FDI in real estate, other sectors of the Philippine economy such as IT-BPM and POGOs, are quite attractive to investors, which drives demand for office, commercial, and industrial properties. Infrastructure programs have a positive effect on real estate demand as they help improve the country's business environment. As these emerging trends fuel sustainable growth of the sector, property developments are not only being seen in Metro Manila and key urban centers but also in secondary and tertiary cities where developers have started to explore for possible projects (Remo, 2019).

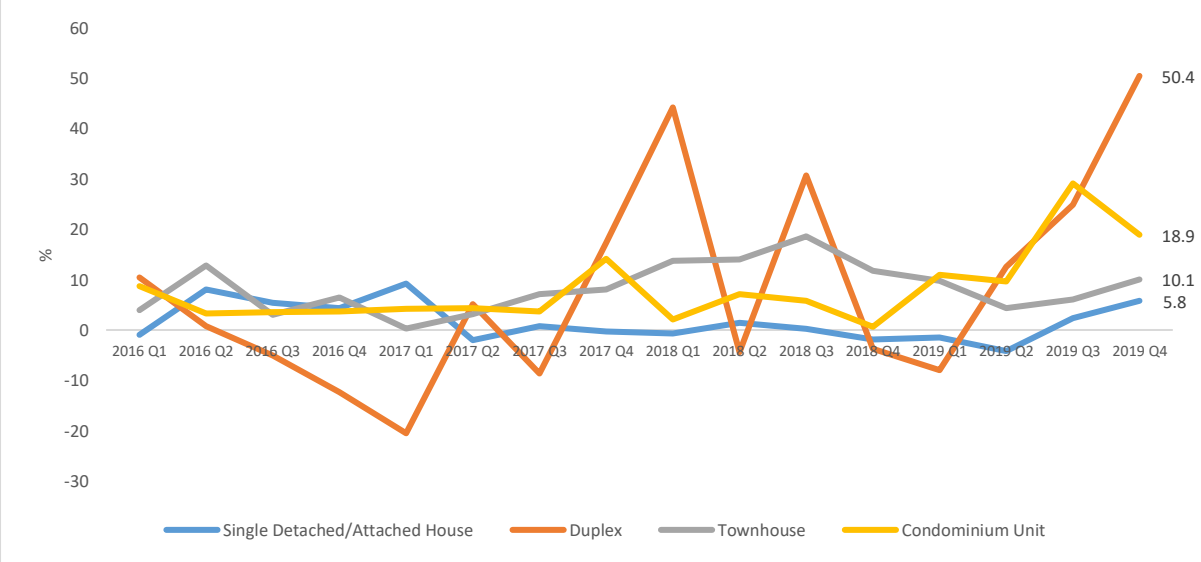
The following sections will discuss the different market segments of real estate in the Philippines, which are residential, office, and retail. Industrial real estate is not included in the discussion due to a lack of information and data on this segment in the country.

3.1 Market Segments

3.1.1 Residential Market

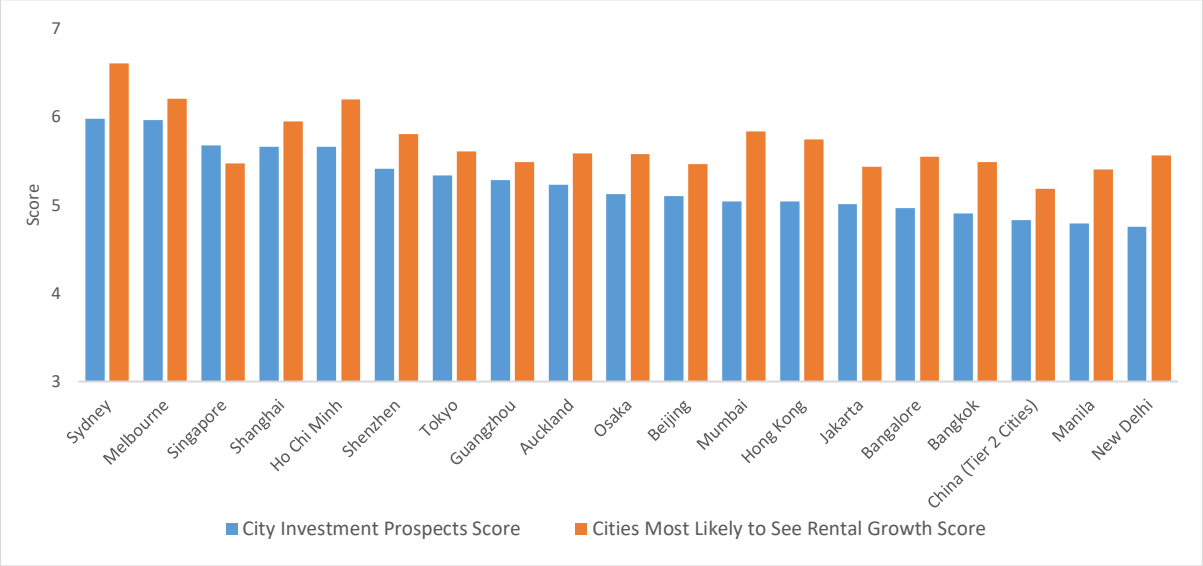
Due to economic growth and strong demand, the continued rise in real estate prices is inevitable, however comparing it with its neighboring countries, it remains relatively low. In most Asia rankings of top investment cities, Manila scores behind many other cities in the region in terms of real estate prices and development prospects. For instance, Manila ranked eighth in PwC's regional ranking of investment prospects in the Asia Pacific in 2018. However, due to the increase in real estate prices as well as a shortage of land availability in the city, its rank dropped to 18th in 2018 (EMIS, 2018).

Figure 17: Residential Real Estate Price Index YoY Growth Rate



Source: Bangko Sentral ng Pilipinas (Q1 2014 = 100)

Figure 18: PwC's Asia Pacific Investment Prospects Ranking 2018



Source: EMIS

Despite this, there has been an increase in the construction of residential properties for the past years. In 2018, the number of newly constructed units in the residential segment went up by 14% and accounted for 73% of the total constructions. The total value of residential constructions reached PHP257.4 billion, which is 54.1% of the total value in 2018. This can be attributed to the expansion of residential condominiums at 153.7%, followed by duplex/quadruplex at 41.8% (PSA, 2019). However, this also reflects a major problem of developers who are running out of suitable land plots in the NCR, especially when business opportunities are concentrated inside this region. For this reason, it is expected that only condominiums will continue to grow in the NCR. In addition, the continued growth of the IT-BPM sector has also been creating new business opportunities for condominium dwellers (EMIS, 2018). This observation is further supported by Lamudi (2020 B), in which it found that the most popular property type among residential property seekers in 2019 was condominium as it may be utilized as one's primary residence or as a rental investment. This has caused Metro Manila's condominium stock to increase by 9.4% from the previous year. Meanwhile, a couple of condominium projects in the Bay Area are being constructed ahead of schedule as developers seize the demand from POGOs (Bondoc J. , 2020 A). It is also interesting to observe that this area continues to record strong leasing from BPO employees. In contrast, Makati CBD's take-up of completed units was fueled by both local and foreign employees (Bondoc J. , 2020 A).

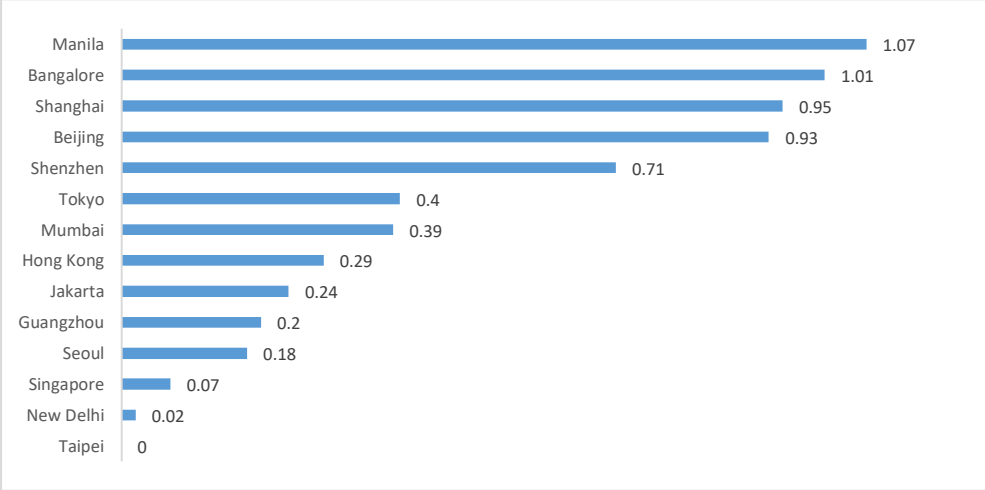
Furthermore, due to the rapid urbanization in Metro Manila, the shortage of land and dramatic increase in land prices became more apparent. As a result, these create substantial demand for residential properties, both apartments, and houses, in the provincial cities such as Pampanga, Laguna, and Cavite (EMIS, 2018). At the same time, there is also a strong interest in real estate properties outside Luzon island, particularly Cebu City and Davao City. For instance, investments in Cebu's IT-BPM sector fuel

the demand for both horizontal and vertical residential developments. To add, the high influx of tourists coming to this city has also propelled a higher demand for condominiums in the area (Lamudi, 2020 B).

3.1.2 Office Market

According to Colliers International's property clock[5], the Philippines' capital, Manila, is one of the cities that favor landlords and developers. The city has also seen a 7% growth in 2019 and is expected to remain one of the highest growth rates in Asia (Haskins, 2020). As seen in the following graphs, Manila's office rent was one of the lowest in the region at around USD21.6/sqm/month in the last quarter of 2019. At the same time, the city also had one of the largest office take-ups with a vacancy rate of 6% as well as a robust pipeline of supply at a 1.07 million square meters, the highest in the region in 2019, responding to the strong demand.

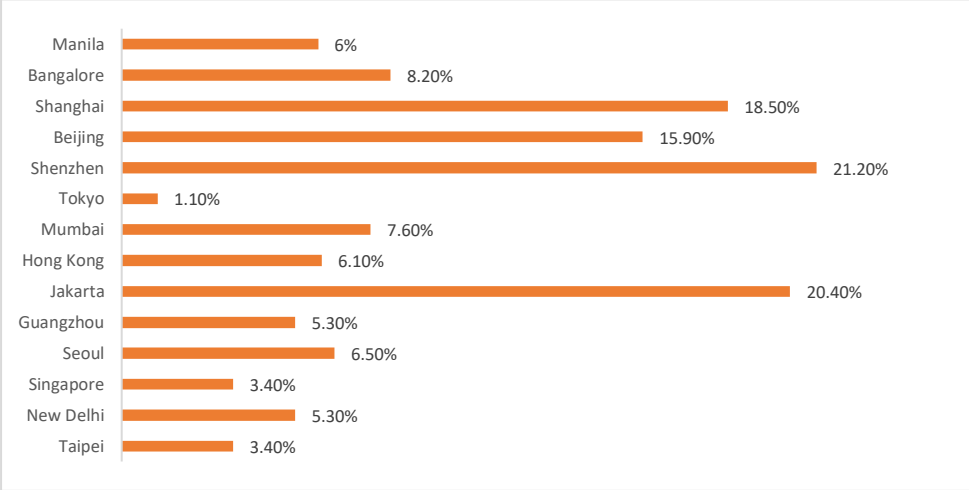
Figure 19: Comparison of New Office Supply in Asia Prime Market 2019 Q4 (million sqm)



Source: Colliers International

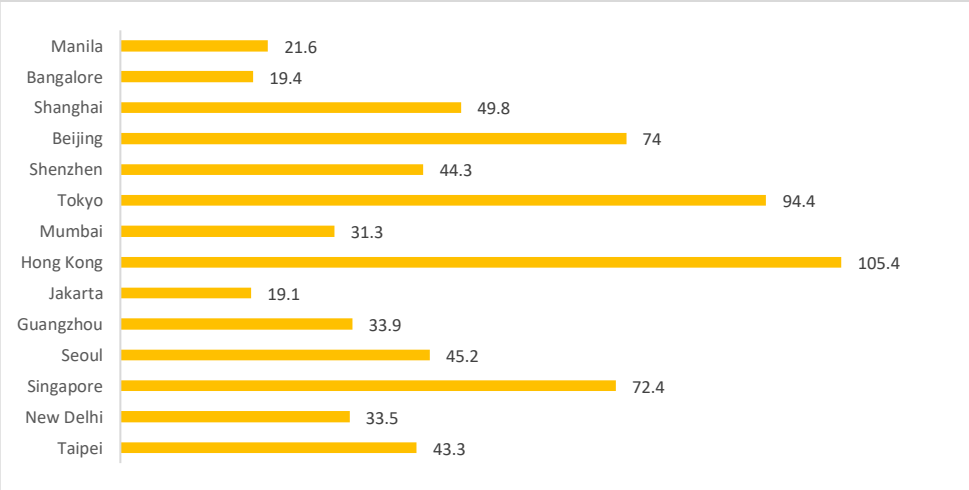
[5] The Property Clock analysis tool summarizes Colliers International's views on prospects for the major office markets in Asia on a two to three-year view

Figure 20: Comparison of Vacancy Rates in Asia Prime Office Market 2019 Q4



Source: Colliers International

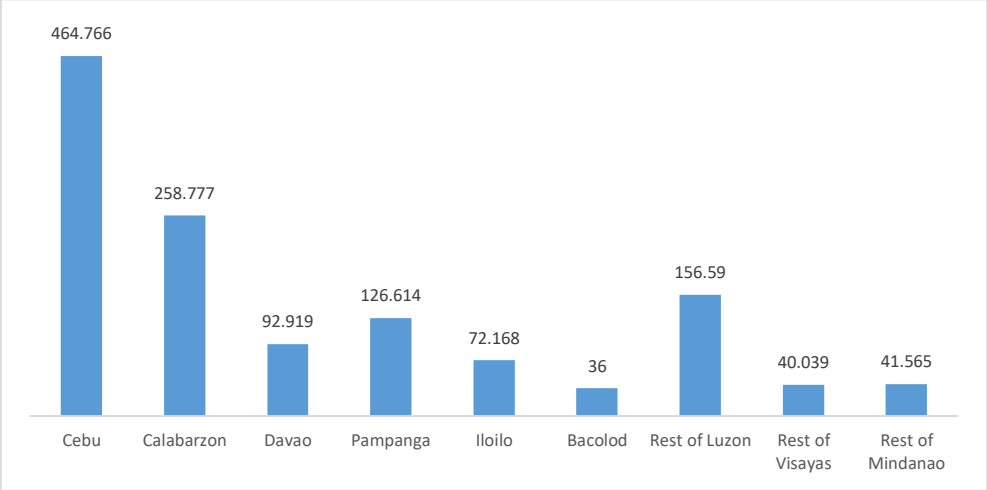
Figure 21: Comparison of Rent in Asia Prime Office Market 2019 Q4 (US$/sqm/month)



Source: Colliers International

Owing to the macroeconomic conditions discussed earlier, as the country remain attractive to both domestic and foreign investors, who seek to establish offices in the prime cities of Manila and Makati, the demand for office space in the country will remain robust (EMIS, 2018). This is especially true when there is a trend of moving to a larger and newer building with large floor space among tenants. This is in parallel with the high demand for office spaces in IT parks that offer robust fiber broadband connectivity and integrated security facilities. For these reasons, the office market in Makati City continues to see a strong demand despite relatively moderate supply as it offers tenants access to excellent amenities, quality office stock, and a skilled local labor force. Makati city is therefore regarded as a core location for many businesses seeking to expand into the Philippines (Fitch Solutions, 2020).

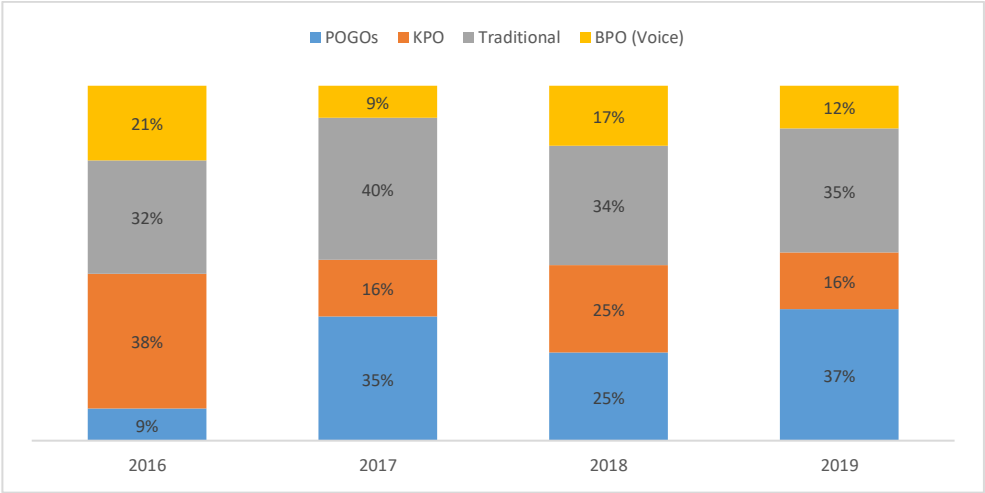
Figure 22: Philippine Office Supply Pipeline (sqm thousands)



Source: EMIS

As seen above, the strategic location of cities and municipalities in the Metro Manila region enjoy demand due to the agglomeration benefits it offers, owing to its high density of firms. Although office rentals in Cebu City are relatively lower than the cities in Metro Manila, the sustained economic activity and reforms by the government support the activity in its office segment. The highest supply of new office spaces is seen in areas of Mandaue and Lapu-Lapu, which are situated close to the Mactan-Cebu International Airport, and demand seems to be centered in spaces at Cebu Business park and Cebu IT Park. In addition, PEZA zones scattered across Makati City, Quezon City, and Cebu are also in demand as foreign businesses seek to capitalize on incentives, such as tax breaks and expedited visa approvals offered by the government (Fitch Solutions, 2020).

Figure 23: Total Office Transactions



Source: Colliers International (Traditional includes companies in various sectors including legal, engineering & construction, government agencies and flexible workspace operators; KPO refers to Knowledge Process Outsourcing[6])

6 KPO services include "non-voice" or back office services such as accounting, creative design, software and applications development, and medical and legal services, among others (SourceWell, 2018).

The key demand driver for office real estate growth in the country mainly comes from the spillovers of the strong performance of the services sector, specifically IT-BPM and POGOs. In particular, BPO companies tend to expand fast and require office space of the highest order. These firms typically prefer office space that is owned by real estate developers and is rented by third-party companies (EMIS, 2018). As already mentioned earlier, the office market has also been experiencing an additional demand driven by the increasing presence of POGOs. This signals a need for new additions of office spaces to be built over the coming years to cater to this fast-increasing demand.

Moreover, due to low interest rates and the appetite for expansion of traditional occupants, they also drive demand for office spaces. According to Colliers, 34% of all office transactions in Metro Manila is from traditional occupants. For instance, there is a higher take-up from construction and engineering firms due to the committed public infrastructure spending by the government and its ambitious infrastructure programs. To add, the disbursement of the 2020 national budget prompts government agencies to absorb bigger office spaces across Metro Manila (Bondoc J. , 2020 B).

Among the total number of non-residential constructions, commercial building construction registered the highest number of constructions at 60.2% of the total in 2018. Also, the value of commercial constructions in 2018 was PHP97.4 billion. The average cost of constructing a commercial-type building is PHP11,099 per square meter, with an average floor area of 598.2 square meters per building. However, it is important to note that these are aggregate figures as non-residential segment also includes institutional, agricultural, and industrial constructions, while commercial includes both office and retail (PSA, 2019).

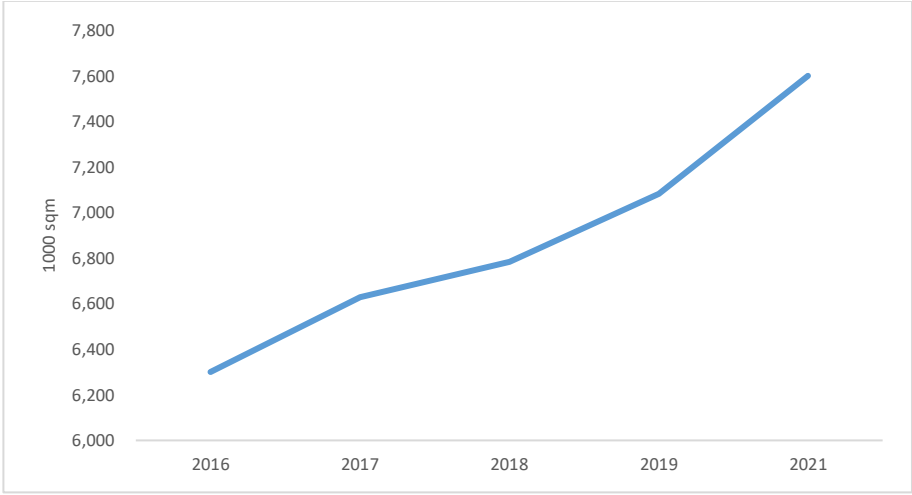
However, it is important to take into consideration the slowing down of economic growth that could negatively affect the expansion of not only traditional firms but also BPOs. In addition, the decision of PAGCOR to freeze approvals on new POGO permits could slow down the demand for office spaces (Bondoc J. , 2020 B).

3.1.3 Retail Market

The retail market in the Philippines is highly fragmented, wherein both local and international players are catering to the country's more affluent consumers. Nevertheless, the rest of the population continues to spend on essentials, constituting the bulk of their household budgets (Fitch Solutions, 2020). According to FIES, Filipino families that belong to the bottom 30% of the income group spent 58.2% on food, while those in the upper 70% income group only spent 39.5% (PSA, 2019 D). To add, the CES showed that 57.2% of Filipino families expect higher spending on food and beverages. They also expect to spend a considerable amount of their money on clothing and footwear, restaurants and cafes, and personal care (BSP, 2019 C). Consequently, the Mass Gross Retail (MGR) and Food & Beverage (F&B)

sectors, which are mostly seen in malls and large-scale shopping facilities, are the two key drivers of demand for the retail market in the country (EMIS, 2018).

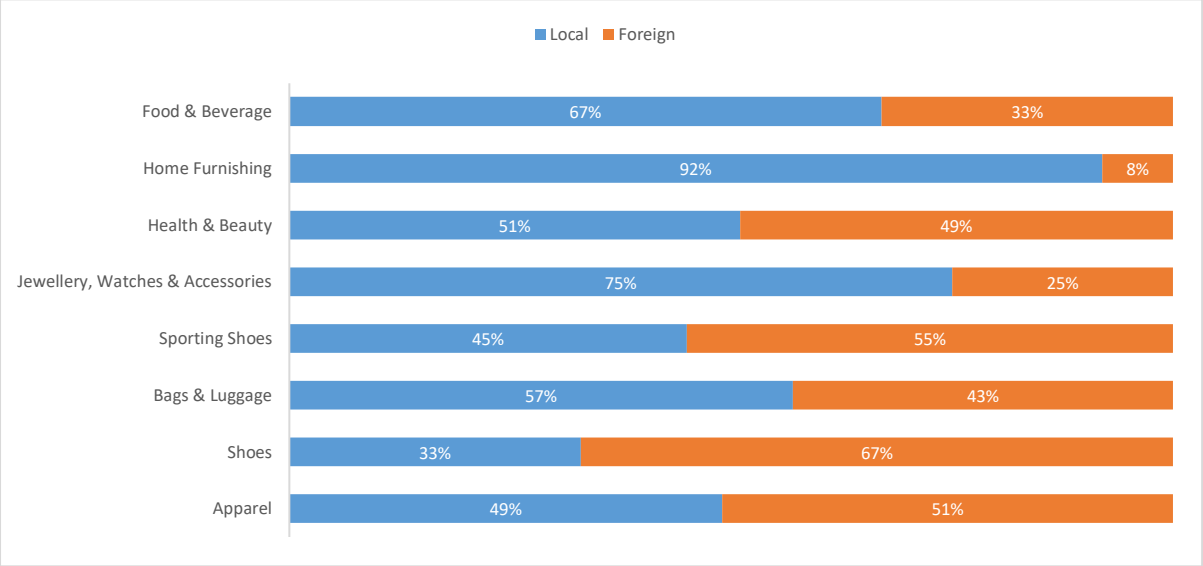
Figure 24: Retail Supply



Source: Colliers International

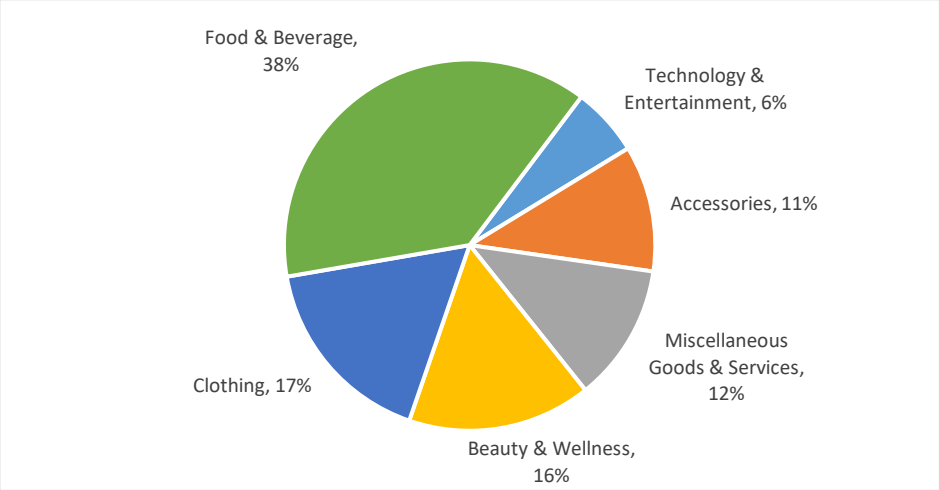
Despite the completion of additional malls in 2019 (Bondoc J. , 2019 B), the vacancy rate of the retail market remained low at 12%, albeit higher than other market segments, all thanks to the strong demand from the F&B and entertainment industries. At the same time, the booming tourism industry has also been playing an important role in its growth as it creates a need for more shopping malls, gaming centers, and entertainment facilities (EMIS, 2018). For these reasons, regional and super-regional malls have been enjoying a high take-up of their spaces due to a diverse tenant mix while continuously looking to present new retail concepts in order to attract foot traffic, which would then cater to the needs of these tenants who are seeking quality space in larger and well-located malls. Meanwhile, continuous retail renovations also attract foreign investments and further boost the market (Fitch Solutions, 2020). The completion of office and residential towers near malls located within major townships across Metro Manila contributes to retail space absorption besides the sustained demand from local consumers (Bondoc J. , 2019 B).

Figure 25: Retail Tenancy Mix in 2017



Source: Colliers International

Figure 26: Expected Tenancy Mix by 2021



Source: Colliers International

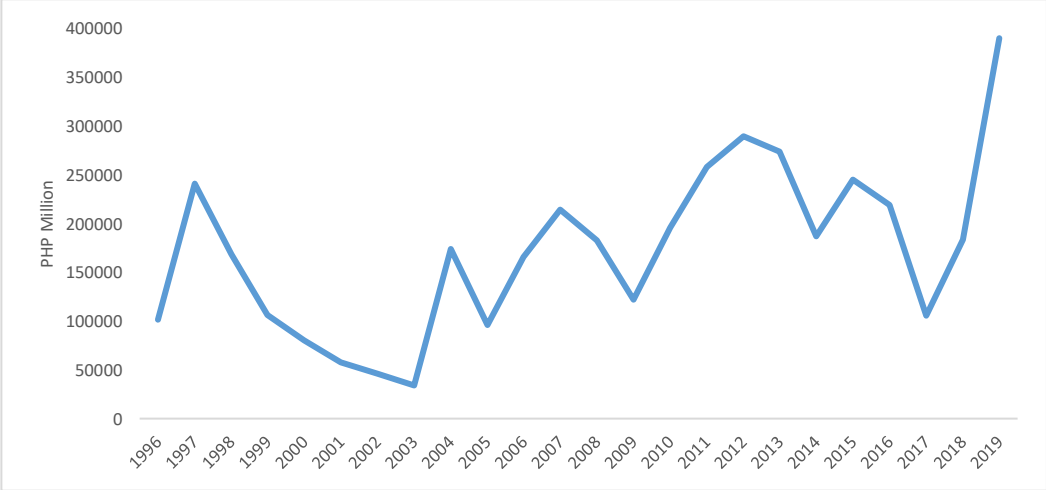
In contrast, smaller retail formats dominate the market in Cebu. Retail spaces in this market are primarily built to accommodate smaller firms and local retailers. This city is also a major tourism destination in the Philippines and as a result, retailers enjoy a fair amount of business from foreign shoppers. Therefore, as the Mactan-Cebu International Airport receives more passenger arrivals, it will continue to support the domestic retail market (Fitch Solutions, 2020).

As discussed earlier, OFW remittances is also a key source of secondary income that drive private consumption. Combined with the increasing GDP per capita, a rising middle class, and higher disposable incomes, which all translates to improved domestic consumer sentiment and ultimately, retain the investment potential in the retail market (Fitch Solutions, 2020).

4. Foreign Direct Investment in the Philippines

Many papers on FDI have stated that one of the reasons why policymakers in both developing and developed countries strive to attract FDI is to create new jobs in their economies. Javorcik (2012) added that the jobs created by FDI are good jobs, both from the worker's perspective – higher wages and receive more training than local firms, and the country's perspective – increase productivity. As a result, the Philippines also seeks foreign investment to generate employment and promote economic development. There are currently 19 Investment Promotion Agencies (IPAs) in the country, each with distinct functions and offering incentive packages to investors that are tasked to develop strategies that will attract investments (BOI, n.d.). Along with free trade zones and special investment packages, they promote the country's favorable demographics, and at the same time leverage Philippine law that treats foreign investors the same as locals, with the exception in those sectors reserved for Filipinos written in the Philippine Constitution and Foreign Investment Act.

Figure 27: Total Approved Investments



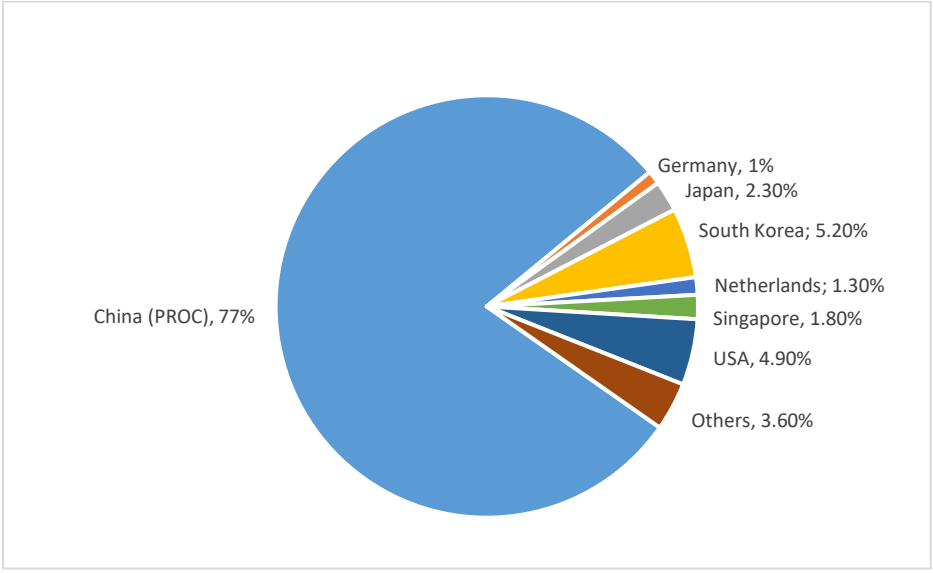
Source: Philippine Statistics Authority

The total approved investments[7] in 2019 reached PHP390.1 billion, which increased by 112.8% compared to the amount recorded the previous year. These are the investment commitments and pledges by foreigners regardless of the percentage of ownership of the ordinary shares, which may be realized in the near future. Singapore ranked first with investment commitments of PHP176.4 billion, which went up by 733% from the previous year. Meanwhile, China ranked second with PHP88.7 billion, 22.7% of the total foreign investment pledges, and a rise of 74.9% from the previous year (PSA, 2020 C). However, most of this pledge came in the last quarter of the year, in which the country dominated the total approved foreign investment for that quarter. According to Camba (2018), Chinese businesses have started to increase because of China's greater involvement in the country and the strength of the

[7] Amount of proposed contribution or share of foreigners to various projects in the Philippines as approved and registered by the 7 investment promotion agencies: Board of Investments (BOI), Clark Development Corporation (CDC), Philippine Economic Zone Authority (PEZA), Subic Bay Metropolitan Authority (SBMA), Authority of the Freeport Area of Bataan (AFAB), BOI-Bangsamoro Autonomous Region in Muslim Mindanao (BOI-BARMM), and Cagayan Economic Zone Authority (CEZA)

Philippine economy. For instance, the infrastructural and construction projects of the Chinese in the country generate a multiplier effect that draws in more Chinese citizens and firms to invest and strengthen their position in the country.

Figure 28: Total Approved FDI by Country of Investor 2019Q4



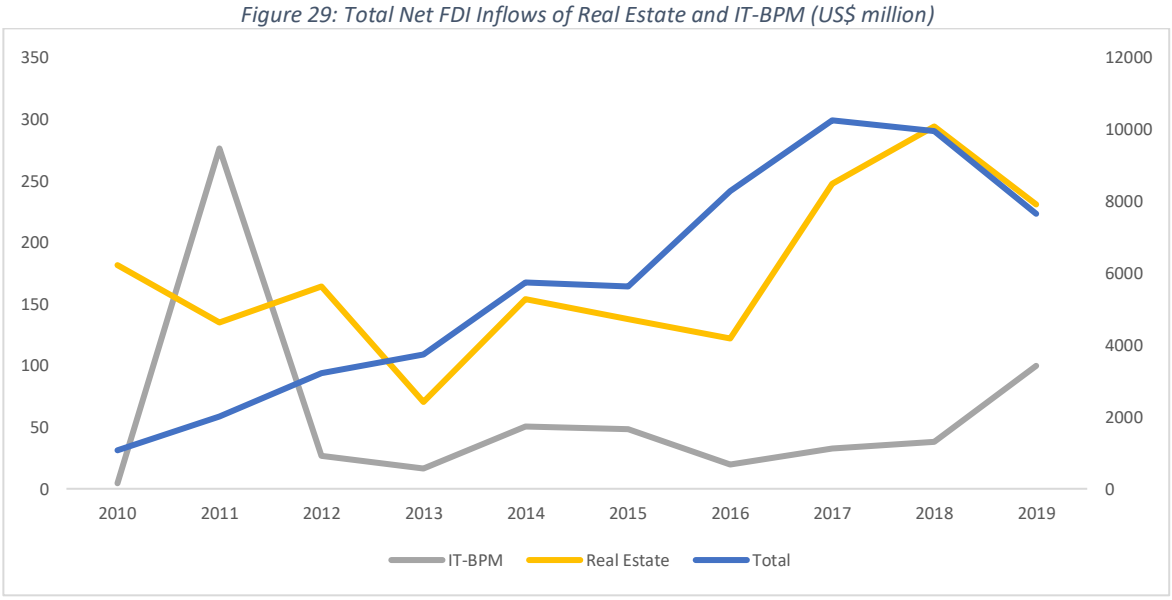
Source: Philippine Statistics Authority

The majority of the foreign investment commitments were intended to finance projects in the Information and Communication sector, which garnered the largest amount at PHP219.4 billion, more than half of the total foreign investments. Whereas the other sector included in the IT-BPM industry, the Administrative & Support Service Activities received the amount of PHP16.7 billion. In contrast, the industry of our interest, Real Estate Activities, only received 2.1% of the total pledges in 2019, at PHP8.14 billion. This figure also declined by 59.4% from PHP20.1 billion in 2018 (PSA, 2020 C).

The approved foreign investments in 2019 are expected to create 129,610 jobs, while the projected employment from approved investments of both foreign and Filipino nationals is 178,954 jobs, 11.4% of which will be employed in the real estate activities sector (PSA, 2020 C).

In accordance with the definition of FDI by the OECD – "*a direct investor who is resident in another economy owns ten percent or more of the ordinary shares or voting power (for incorporated enterprise) or the equivalent (for an unincorporated enterprise). The ten percent cut-off in equity is used to distinguish between direct and portfolio investments*", BSP compiled the actual and realized foreign investments generated, which is included in the Balance of Payments (BOP). In 2019, it recorded a net inflow of USD7.6 billion (PHP396.1 billion) down by 23% from the previous year. 3% of the total FDI was invested in real estate activities, which decreased by 22% from the previous year (BSP, 2020). According to BSP, these are investments made to acquire a lasting interest by a foreign entity in a domestic enterprise. The purpose of such an investor is to have a significant influence and an effective voice in the management of the enterprise.

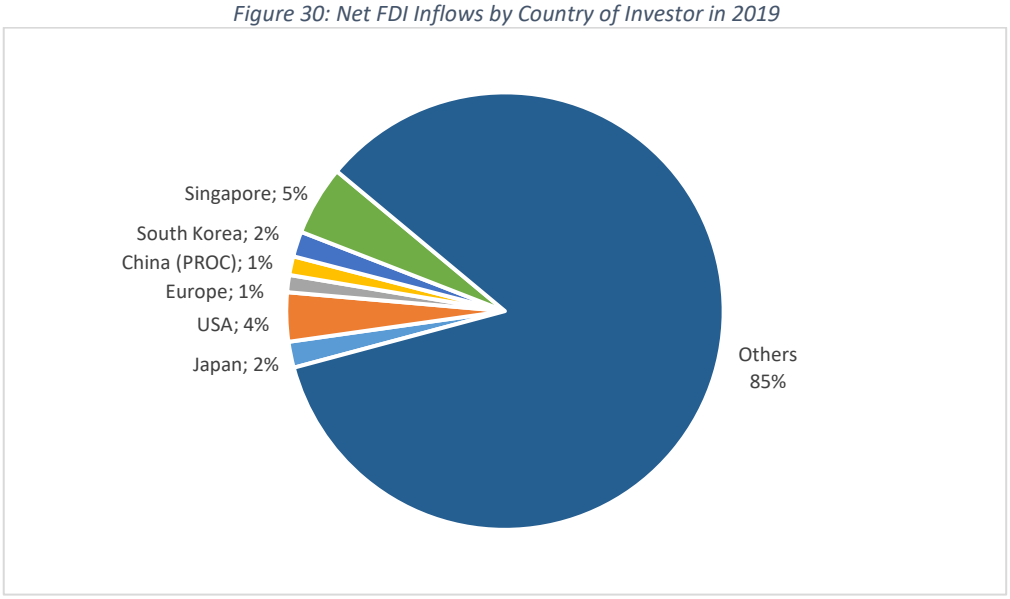
Figure 29: Total Net FDI Inflows of Real Estate and IT-BPM (US$ million)



Source: Bangko Sentral ng Pilipinas (Secondary Axis: Total Net FDI)

In 2019, only 5% of the total net FDI inflows came from Singapore, followed by the USA and Japan. China, second in the number of approved investments of the same year, only contributed 1.4% in the actual total investments.

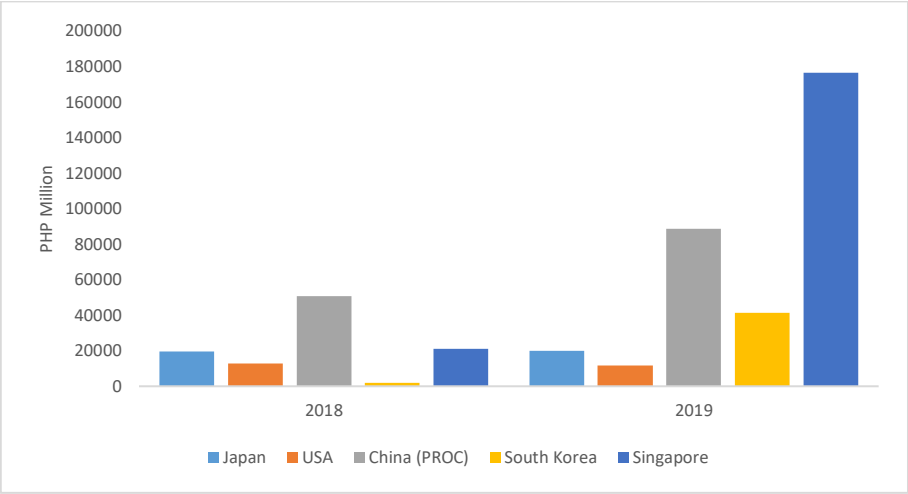
Figure 30: Net FDI Inflows by Country of Investor in 2019



Source: Bangko Sentral ng Pilipinas

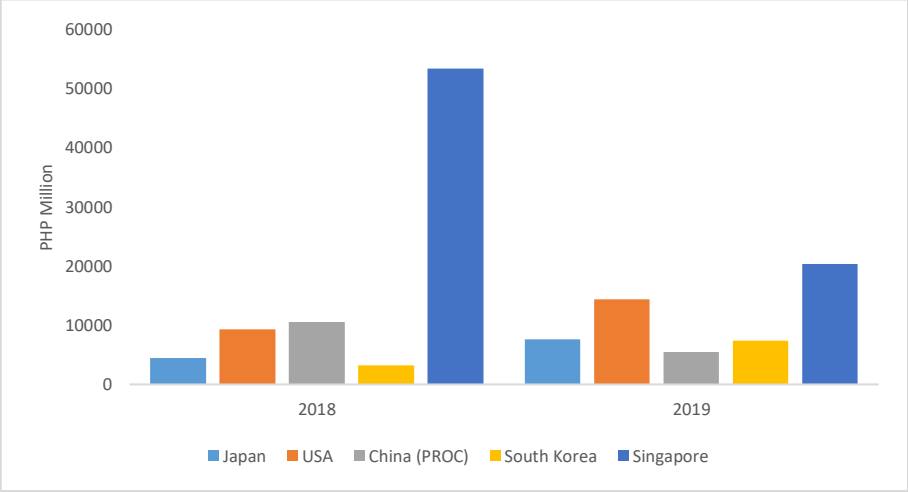
Aside from the differences in the ranking of countries from the earlier statistics of approved investments and the above net FDI inflows, it is also very interesting to see that despite the impressive amount of investment commitments from these foreign countries, a big chunk of it has still yet to materialize in the near future. For instance, China has pledged to invest almost PHP140 billion since 2018 to date, but only 11.48% of this has actually been realized during the same time period. As opposed to the USA, 98.37% of its commitment became an actual investment.

Figure 31: Total Investment Pledge by Country of Investor



Source: Philippine Statistics Authority

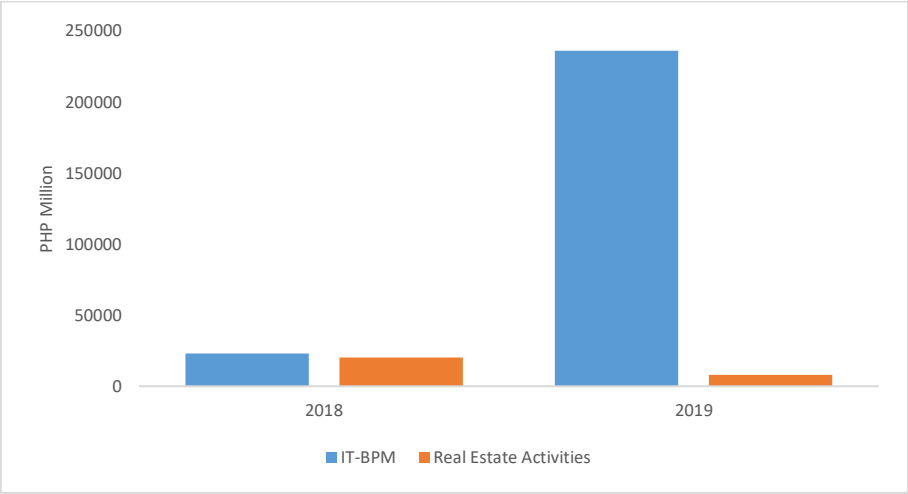
Figure 32: Actual Investment by Country of Investor



Source: Bangko Sentral ng Pilipinas

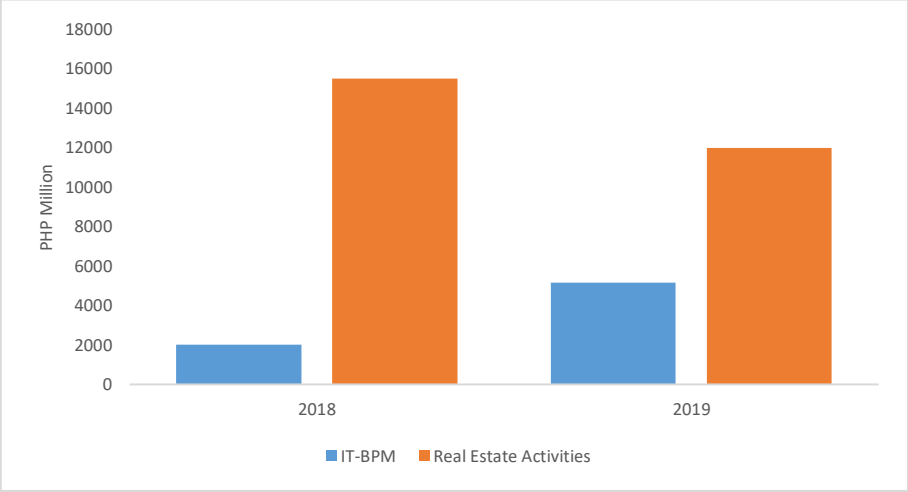
Furthermore, despite the impressively huge amount committed by foreign investors in the industries of IT-BPM, only 3% of them occurred. In contrast to real estate activities, wherein 97% of the pledge amount became an actual investment. Therefore, it is more meaningful to shift the focus from whether FDI has increased or not to where investments go, how they occur, and who benefits (Camba, 2018).

Figure 33: Total Investment Pledge by Sector



Source: Philippine Statistics Authority

Figure 34: Actual Investment by Sector



Source: Bangko Sentral ng Pilipinas

4.1 Policies toward Real Estate FDI

In the most recent Ease of Doing Business report, the Philippines rose to 95th place from 124th in 2019, owing to the many reforms it started implementing since 2018, making it easier to do business. For instance, by improving coordination and streamlining the process for obtaining an occupancy certificate (World Bank, 2020), it made dealing with construction permits simpler hence, it received a score of 70 (85th rank). With regards to registering property, the number of procedures to do so is higher than the average in East Asia & Pacific, but it takes a considerably shorter amount of time with lower costs. Therefore, factors such as restrictions on foreign ownership, low-quality infrastructure, and lack of transparency hinder foreign investment.

The Philippines has a complex system of laws, rules, and regulations that govern real estate transactions in the country. In addition, incentives and other regulatory mechanisms for the sale, purchase, lease, and ownership of different types of real estate are scattered in various statutes and regulations, while

local government units also regulate the ownership and disposition of real estate through various locality specific ordinances. This legal complexity is making it challenging for foreign investors to navigate the real estate landscape of the country (SyCip Law Center, 2013).

The 1987 Philippine Constitution specified that only Filipino citizens and majority Filipino-owned companies incorporated locally are allowed to own land in the country. However, foreign nationals and foreign companies may indirectly own private lands by taking a minority interest of up to 40% in a national corporation (EMIS, 2018). Conversely, this foreign equity restriction only pertains to private lands hence, foreign nationals and corporations may also take 100% interest in buildings, machinery, and other forms of real property other than lands. As an alternative, the Philippine Condominium Act allows foreign nationals to own condominium units in projects registered with the Philippine Housing and Land Use Regulatory Board (SyCip Law Center, 2013). This is also applied to commercial buildings.

They may also lease land on regulated terms for up to 25 years, which is renewable for another 25 years. Meanwhile, the Philippine Investors' Lease Act allows the lease of private lands to be used for industrial estates, factories, assembly or processing plants, or other similar purposes, for a maximum term of 50 years and renewable for another 25 years. This is also applicable to those foreign companies located in economic and industrial zones (EMIS, 2018).

4.2 Entry Modes

There are different options available for foreign nationals and foreign companies seeking to invest in real estate in the Philippines. Office construction projects may be constituted under the Philippine Condominium Act that allows foreign entities to own specific areas in a building – 40% of the units therein based on floor area, plus an aggregate of up to 40% ownership in the land. For those intending to buy or lease property for commercial operations in the country, they are required to obtain a business license from the Philippine Securities and Exchange Commission (SyCip Law Center, 2013). This requires the foreign entity to set up a domestic corporation in the country, owning less than or up to 40% foreign equity and is formed by 5-15 natural persons of legal age as incorporators, the majority of which must be Philippine residents. As this activity is subject to foreign equity limitations, a foreign investor will have to set up a domestic corporation with a Philippine national as a joint venture partner (Quisumbing Torres, 2019).

According to Colliers, joint ventures have been on the rise for the past years as many major foreign real estate firms and developers have already expanded their footprints in the country by launching projects with local players. Through a joint venture, foreign firms can capitalize on the high yields derived from projects in the country while local developers benefit from prominent foreign brands. For instance,

condominium projects by Japanese brands attract many local investors due to their image of precision and high architectural and engineering standards (Bondoc J. , 2019 C).

Establishing branch offices in the Philippines require foreign firms a minimum investment of US$200,000 and the employment of at least 50 Filipino employees. Therefore, a survey among Chinese investors revealed that Chinese investments most commonly take two pathways: mergers and joint ventures, and acquiring a controlling interest in an existing foreign company (Camba, 2018). For instance, Hong Kong Land Group entered into a joint venture with a major local real estate firm, Robinsons Land Corp, in 2018 to purchase and develop real estate properties (Gonzales, 2018). Among their notable projects in the Philippines are premium properties: One Roxas Triangle and Two Roxas Triangle in Makati, and Mandani Bay, a premium waterfront development in Cebu. Earlier this year, they launched The Velaris Residences, which is a 45-story premium condominium development (Inquirer, 2020). Moreover, it is also common for Chinese firms to acquire stakes in pre-existing major and smaller Philippine companies in industries such as call centers, shoe and bag manufacturing factories, beach resorts, etc., intending to bypass the legal hurdles of greenfield investments as well as free up capital of their existing Filipino partners, which would then allow them to invest somewhere else, such as in a real estate (Camba, 2018).

5. Literature Review

This section of literature review consists of three parts: first, to provide a foundation, theories related to the research topic will be presented. This will be followed by the review of FDI in general, which will only concern inward FDI to developing countries to limit the scope of the existing academic papers. Then a review of existing studies on FDI in real estate will be conducted but it will widen the scope, without any country or regional restrictions due to the limited number of papers on this topic.

5.1 Theoretical Background

As one of the aims of this study is to validate existing FDI theories, we will therefore present and analyze existing theories that provide a foundation for our study and to which our findings will contribute.

5.1.1 Internationalization Theory

Internationalization theory emphasizes on explaining the phenomenon of engagement of MNEs in foreign production and sales and how they develop an international market in response to an externality. Caves argued that MNEs will respond to the imperfect market for knowledge by engaging in product differentiation and horizontal integration that aimed to extend their monopoly advantages into the global

market. Knickerbocker further investigated defensive FDI by which is often undertaken by MNEs in an oligopolistic market in the home country (Rugman, 1980). It is argued that firms engage in FDI activities to ensure their market share in foreign countries and hence it is an attempt to retain and exploit their firm-specific advantage. Although the concept of internationalization has been developed, a clear explanation of benefits and costs of internationalization were identified, and internationalization as a general theory was synthesized in a book by Buckley and Casson in 1976 (Rugman, 1980). Later in 1976, Stephen H. Hymer further developed and launched the theory by identifying two major determinants of FDI: removal of competition and firm-specific advantages in a particular activity as a response to market imperfection (Horaguchi & Toyne, 1990).

5.1.2 The Eclectic Paradigm

The eclectic paradigm is a three-tiered evaluation framework developed by John H. Dunning based on internationalization theory. This paradigm is also known as the ownership, location, internationalization (OLI) model. It is a classic conceptual framework used to analyze the determinants of international production undertaken by MNEs as it indicates the extent and pattern of MNEs determined by OLI advantages (Dunning, 1988; Dunning, 2000).

First, the ownership advantage refers to intangible assets which are in possession of the investing firm and can be transferred at low costs. Hence, three types of specific advantages are specified: monopoly advantages, technology and economies of scale and scope, and economies of learning and financial capital. Therefore, investing enterprises are more likely to engage in foreign production if they are in possession of a greater competitive advantage compared to other firms. Hymer (1976) and Kindleberger (1969) argued the essence of ownership advantages in the forms of product differentiation, managerial expertise, new technology, and government interference to offset the disadvantages of competing with local counterparts.

Second, the location advantage is related to particular countries, which offer complementary assets that can be categorized into three groups: economic benefits (production, costs of production, transportation, telecommunications, market size, etc.), political advantages (common or specific policies that affect FDI flows), and social advantages (cultural diversity). Thus, the joint use of ownership advantage and location advantage is the key determinant of the global competitiveness of the firms in a foreign country.

Last, the internationalization advantage assesses why one entry mode is more beneficial than another entry mode in exploiting or augmenting the ownership advantages in combination with locational advantages.

Dunning (1988) stated that OLI advantages varied depending on the developing stage, the size, technology level, competitiveness form (competitive or monopolistic) of the host country. He added

that these advantages also depend on the size, age, innovativeness, and size of the firm. In sum, OLI parameters are firm-, context-, industry-, home-country, and host-country dependent.

5.1.3 Four Main Types of FDI

In 1993, Dunning also introduced four main motives for MNEs to engage in FDI activities, and they are classified as following (Dunning, 2008):

First, market-seeking FDI, also known as horizontal FDI, is undertaken by MNEs to satisfy or exploit the opportunities in one or several foreign markets. While, resource-seeking and also either known as vertical FDI or supply oriented FDI, is undertaken by MNEs to acquire particular types of resources that are not available in their respective home countries, such as natural resources and minerals, skilled labor or raw materials. Third, efficiency-seeking FDI is undertaken when MNEs consider taking advantage of one or more of the following: availability and low-cost factors in different countries; the economies of scale and scope; differences in consumer tastes; and supply capabilities. Lastly, strategic asset-seeking FDI is undertaken to protect or augment the existing specific ownership advantages and/or to reduce those advantages of the competing firms.

5.2 FDI Literature

5.2.1 General FDI Determinants

The effects of GDP per capita, infrastructure quality, labor cost, openness, taxes, political instability on the promotion of FDI have been widely examined (Asiedu, 2002; Blonigen, 2005). Empirical results showed that traditional determinants were more important than institutional and political determinants in BRIC[8] countries and most inward FDI was found to be motivated by market-seeking rather than resource-seeking in these countries (Jadhav, 2012).

Indeed, several studies confirmed the positive impact of market size, bilateral trade, trade openness, infrastructure (Jadhav, 2012; Bénassy-Quéré, Coupet, & Mayer, 2007; Fedderke & Romm, 2006; Mottaleb & Kalirajan, 2010; Asiedu, 2002; Boudier-Bensebaa, 2005; Erdal & Tatoglu, 2002)**,** exchange rate (Cuyvers, Soeng, Plasmans, & Bulcke, 2011; Love & Lage-Hidalgo, 2000)**,** inflation (Jadhav, 2012; Hayakawa, Kimura, & Lee, 2013) on the total inflow of FDI. In contrast, the rise of taxation on MNEs would reduce inward FDI (Wei, 2000; Fedderke & Romm, 2006).

Mottaleb and Kalirajan (2010) attempted to identify the factors that determine FDI inflow to developing countries including 68 low-income and low-middle income countries. In addition to those traditional determinants mentioned above, they also found that countries that offered a more business-friendly

[8] A group acronym for the following developing countries: Brazil, Russia, India, and China

environment were more likely to attract FDI. In the sample, Asian countries were more favored by foreign investors probably due to the average large market size and trade openness.

Globeman and Shapiro (2002) examined the effects of governance infrastructure on both FDI inflows and outflows for a broad sample of developed and developing countries over 1995–97. They found that Governance infrastructure appeared to be more important for developing and transition economies and thus, it had a direct influence on FDI inflows. Therefore, their findings indicated that political improvements cause a higher level of inward FDI in developing countries compared to advanced economies. This is consistent with findings based on African countries, where several studies confirmed the negative association of corruption with FDI inflows (Dupasquier & Osakwe, 2006; Anyanwu, 2012; Asiedu, 2006; Wei, 2000). Moreover, Fedderke and Room (2006) revealed that in particular, improved property rights would raise inward FDI significantly in South Africa.

An empirical study conducted by Petri (2012) with the aim to explore whether Asian FDI patterns differ significantly from those elsewhere, showed that Asian FDI outflows tended to flow from high-tech countries to low-tech countries with relatively strong property right policies and therefore, technology policy in host country turned out to be a significant determinant of attracting FDI by which was unlikely in other regions.

Moreover, several studies had examined the locational determinants of FDI, for instance, Zhou et al. (2002) and Cheng and Kwan (2000) found a positive effect of government preferential policies such as Special Economic Zones and Opening Coastal Cities were effective on promoting FDI. Urate and Kawai (2000) revealed that Japanese firms tended to favor locations with low-wage labor, well-developed infrastructure, good government, a sizeable local market, and industrial agglomeration in developing countries. While Boudier-Bensebaa (2005) reached a similar conclusion that a large workforce, industrial demand, manufacturing density, and inter-industrial agglomeration economies had a significant and positive impact on the FDI location choice of MNEs in Hungary. Love and Lage-Hidalgo (2000) revealed that the important locational considerations were relative factor costs and domestic demand for US MNEs in making the decision of whether they should invest in Mexico between 1967 and 1994.

In addition, geographical distance was found to have a negative effect on inward FDI in Cambodia. This could be explained by the fact that the majority of the inward FDI was from Asian neighboring countries (Cuyvers et al., 2011). However, Thomas and Grosse (2001) examined the country-of-origin factors that are related to FDI in Mexico. They found a positive impact of cultural and geographical distance on FDI inflows in Mexico, indicating an increase in cultural and geographical distance between home and the host country would lead to higher levels of FDI inflows. The explanation behind might be due to the larger share of inward FDI that firms undertook from less-Latin countries such as the US,

Germany, and Japan rather than from more-Latin countries such as France, Spain, and other Latin American nations.

Moreover, Noorbakhsh et al. (2001) studied the relationship between human capital and FDI inflows to developing countries. They proved that human capital was among the most important determinants and it played a greater role through time. As a result, they suggest pursuing policies to improve competencies of the local labor and thus, build up human capabilities in developing countries, as it would lead to an increase in the volume and quality of the FDI into the developing host country. Consequently, if emerging countries only relied on low-cost and unskilled labor or natural resources to attract FDI, only low value-added industries would benefit from foreign investments and hence, it might slow down economic growth. In line with the findings of Zhou et al. (2002), regional development in China was positively related to Japanese FDI inflows that indicated Japanese investors were responding to the availability of a skilled and educated employment base in Chinese provinces. Besides, the quantitative result of the positive effect of unit labor costs on FDI was also confirmed in Hungarian countries, indicating skill effects (Boudier-Bensebaa, 2005). Nevertheless, Globerman and Shapiro (2002) found that human capital was relatively more important to developed countries.

5.2.2 Risk and Uncertainty

However, there are some risks and uncertainties associated when investing abroad, particularly in developing countries. For instance, internal conflict, corruption, military policies were particularly significant for developing countries (Hayakawa et al., 2013). More empirical results had proved that countries with high economic risk including high exchange rate volatility, high inflation, and political risk would discourage Japanese FDI, as Japanese firms tended to be risk-averse (Urata & Kawai, 2000). This is in accordance with Erdal and Tatoglu (2002) who found exchange rate instability discouraged foreign investor to make an investment in Turkey, while Cuyvers et al (2011) revealed that an improved political risk score would attract more FDI in Cambodia, as it would create a more favorable investment environment for foreign investors. Obwona (2001) stated that macroeconomic and political stability and policy consistency were crucial in attracting FDI and indeed more important than incentive schemes in Uganda based on survey and empirical results.

Despite enormous profit opportunities in Africa, foreign investors were holding back their investments due to political and macroeconomic instability, lack of policy transparency, and favorable investment climate. In addition, low growth rate, small domestic market, poor infrastructure, high trade protectionism, high level of corruption, weak governance were other factors that restricted FDI inflows to developing countries, (Dupasquier & Osakwe, 2006; Fedderke & Romm, 2006; Bénassy-Quéré, Coupet, & Mayer, 2007). Therefore, Anyanwu (2012) suggested regional economic cooperation for African countries with the purpose of promoting political stability through a restricted membership,

where member countries could coordinate their policies to ensure political consistency and stability hence increasing the level of FDI inflows in this region.

5.2.3 Spillover Effects

FDI flows into developing countries has been recognized as a source of various spillover effects, such as technology, know-how, productivity, managerial skills, among many others.

The impact of FDI on economic growth has been widely investigated. For instance, Zhang (2001) attempted to examine whether FDI did promote economic growth, in which the results provided evidence for a positive effect in four Asian economies (Hong Kong, Indonesia, Singapore, and Taiwan) due to their successful export-promotion strategy and improved human capital. However, she concluded that the effect on economic growth would be dependent on a particular country. In fact, FDI was more likely to promote economic growth in an open and liberalized economy with improved education and human capability and stable macroeconomy. This is consistent with an empirical study conducted by Hsiao and Hsiao (2006) with the purpose of examining Granger causality relations between GDP, exports, and FDI among 8 Asian countries including the Philippines. In line with previous studies, they also provided support for the positive effect of inward FDI on GDP growth for East and Southeast Asian economies. Besides, the effect seemed to be reinforcing in which FDI had both direct effect on GDP and indirectly increased GDP through interactions between exports and GDP. Moreover, Wang (2009) found a strong growth effect generated by FDI in 12 Asian economies over the period of 1987 to 1997, which might be explained by the stronger spillover effect in the manufacturing sector. Interestingly, FDI was also found to be more efficient in promoting economic growth than domestic investment. Lastly, Liu and Li (2005) further confirmed the positive and indirect effect of FDI on economic growth, and additionally, it influenced indirectly through interaction with human capital from the mid-1980s.

Javorcik (2004) focused on the productivity effect spilled over from foreign firms to domestic firms using firm-level data from Lithuania. The results revealed backward linkage (foreign affiliates and domestic suppliers) spillovers for manufacturing firms in Lithuania, showing that an increase in the presence of foreign enterprises increases 15% output of domestic supplying firms. Meanwhile, productivity spillovers emerged in projects with shared ownership by foreign and domestic firms. This is consistent with the study conducted by Lin et al. (2009) that examined whether Chinese domestic firms benefited from FDI inflows. They also found robust findings that supported backward spillovers in the Chinese manufacturing industry from non-HMT (Hong Kong, Macao Taiwan) FDI. On the other hand, these FDI sources also tended to generate negative horizontal spillover effects which might be explained by the fact that HMT firms were more labor-intensive and competed frequently with local firms. Whereas FDI originated from OECD countries generated positive horizontal spillovers. Besides, Bwalya (2006) analyzed the productivity externalities of FDI to local firms using firm-level data from

Zambia. The findings revealed a negative productivity spillover, which might be an indication of the competition effect. However, the empirical result provided evidence for inter-industry technology and knowledge spillovers through backward or forward linkages in the country.

Nevertheless, Konings (2001) revealed a negative spillover effect from the presence of foreign firms on domestic firms in Poland and no spillovers in Bulgaria and Romania, implying competition effect dominated technology spillover effect. This result also indicated the large technology gap between these emerging countries and the source countries of FDI.

Indeed, spillovers varied with the inward FDI and characteristics of local firms (Sinani & Meyer, 2004). Particularly, high-income and low-income countries appeared to benefit more from FDI spillovers, while economies with a moderate degree of institutional development might benefit the least. Moreover, a higher degree of corruption appeared to benefit more from spillovers, as firms in corrupt countries were able to use illegal means to obtain technologies from foreign MNEs (Meyer & Sinani, 2009).

Moreover, Sinani and Meyer (2004) disentangled the positive effect of technology transfer on the productivity of domestic firms from that of competition during the period from 1994 to 1999 in Estonia. The results revealed that ownership structure influenced the absorptive capacity of the local firm. It was evident that outsider-owned firms benefited significantly more from the presence of foreign firms in Estonia because they were proactively seeking new ideas and business management from foreign firms. In addition, they were more export-oriented and thus, gained knowledge in the global market.

Damijan et al. (2013) presented a comparative study of the importance of direct technology transfer and spillovers through FDI in 10 transition countries. The empirical results indicated that positive horizontal spillovers were more likely to be present in medium or highly productive firms, while vertical spillovers were less frequent and smaller. To add, productive firms were more likely to benefit from vertical spillovers. This study suggested both larger and smaller local firms were affected by the presence of foreign firms, therefore, it is crucial for domestic firms to improve their absorptive capacity and productivity level in order to benefit from the spillover effects.

Kokko et al. (2001) examined the differences in the character and impact of FDI entering Uruguay. They revealed that export spillovers were more likely to emerge from the presence of foreign MNEs established in a more outward-oriented trade regime. In addition, the presence of foreign firms only had an impact on the Uruguayan firms that were exporting to the global market. This is in line with the findings of Liu and Buck (2007), who investigated the impact of different channels for technology spillover on the innovation performance of Chinese high-tech industries using panel data analysis. They confirmed significant export spillover channel in high-tech Chinese industries and pointed out the importance of the absorptive ability by which was the crucial condition for detecting technology spillover. Similarly, Liu and Li (2005) also pointed out the negative impact of a large technology gap on FDI in developing countries owing to low technology absorptive capability.

Görg and Strobl (2005) investigated and proved spillovers occurred through worker mobility, wherein domestic firms owned by a person with previous work experience in a foreign MNE appeared to be more productive in comparison with other domestic firms in the same industry.

5.2.4 Philippine FDI

There are very few published studies that aim to examine both the determinants and spillovers of FDI, particularly in the Philippines. Magtulis & Park (2017) were interested in finding out the reason behind the country being ranked among the lowest in the region for the past 30 years. They studied the lagged effects of the current administration's anti-corruption stance, business reforms, and economic growth on FDI in the country and concluded that FDI inflows are likely to decline if the Philippines is perceived less corrupt with a lag of three years. Their findings are consistent with the determinants discussed earlier, economic growth and an investor-friendly business environment both have a significant and positive influence on FDI. However, the increase in FDI due to improved business environment will not be realized immediately, rather there is a two-year lag before this relationship manifests, which indicates that foreign investors consider the sustainability of policy before making any investment decisions. Furthermore, the study done by Arango (2008) who compared FDI between Colombia and the Philippines, is consistent with the findings that GDP growth supports growth in FDI.

Ismail & Yussof (2003) also confirmed that FDI appears primarily responsive to the level of economic development and openness of the economy. They added that the size of the domestic market also determines the FDI flows into the country while the growth in real wages and the subsequent increase in labor cost discourage inflows. However, the study done by Ho & Rashid (2011) showed a negative relationship between FDI and economic growth and concluded that foreign investors are rather attracted to lower cost of production as a result of lower economic activity of the host country. They also proposed that the Philippines' degree of openness is helpful in explaining the changes in FDI inflows as it exhibits opportunities for larger economies of scale and spillover effects. Among the 5 ASEAN countries investigated, the Philippines was the only country that has its FDI inflows react positively with the increase in its manufacturing output. Finally, they identified that an increase in the number of tourist arrivals in the country will simultaneously attract and stimulate FDI inflows, and implies that the Philippines rely on its tourism industry to generate national income and sustain the economy.

Aldaba (2006) compared the investment incentives offered by the Philippines with other Asian countries and its role in attracting FDI inflows. He concluded that the country's tax incentives, no matter how generous, are not enough to generate a substantial amount of foreign investments due to the deficiencies in its investment environment. He pointed out that the efforts made by the Philippines to attract foreign investments by providing various tax incentives have resulted in a complicated incentive system (i.e. 80% of BOI incentives were redundant) and can be used to explain why the country is

performing badly in attracting FDI inflows relative to its neighbors. Aldaba followed up his paper with another study focused on investigating whether FDI generates spillovers (2010). Their findings showed that the weak competitiveness of Filipino firms and their inability to absorb the technology and knowledge being transferred from FDI were the main reason why the spillover effects of FDI have remained limited. They suggested that to increase spillovers, the industry should move up the value chain and technology scale (i.e. development of specialized skills and technological capabilities).

Agbola (2014) analyzed the cointegrating relationships between FDI, human capital, infrastructure, and economic growth of the Philippines with a sample period of 1965-2010 and found that FDI aids economic growth only when there is adequate absorptive capacity brought by increased human capital and infrastructure development. Therefore suggesting a need to invest in human capital and infrastructure to attract FDI and ultimately, achieve sustained economic development in the Philippines.

Austria (2006) described the factors that drive FDI in the Philippines, which are FDI policy, investment incentives, trade liberalization, exchange rate deregulation, deregulation and privatization, monetary policy and the labor force (high literacy, good quality of secondary education, easy to train, and ability to speak English). Meanwhile, she also analyzed those factors that inhibit FDI such as labor force (labor unions, inadequate vocational skills and high cost of unskilled labor); poor logistics and infrastructure that restrict investments to industries with weak linkages with the rest of the Philippine economy, while increasing production costs; immature local supplier industry; and legal system and bureaucracy. Moreover, FDI also significantly contributed in the country's economic development, especially in capital formation and access to world markets, but pointed out the issue of limited technological spillover owing to the fact that foreign investors in the country were only interested in its cheap skilled labor, and the lack of clustering of local suppliers around MNCs.

Makabenta (2002) pointed out the role of special economic zones (SEZs) and infrastructure in the location decisions of manufacturing FDI in the Philippines. The findings show that FDI tends to utilize labor in highly urbanized areas offering competitive wages and perceive poor regions that offer lower wages as having less competitive industrial conditions. The wide regional income disparity therefore undermines the generous incentives of zones in the priority areas located in these poor regions as they fail to attract FDI. Moreover, there has been an agglomeration near and within Metro Manila due to better quality infrastructure (energy, telecommunications, and transport) that stimulates economic activity and accessibility to markets and intermediate services.

5.3 FDI in Real Estate

FDI in manufacturing has been one of the central topics in academic research, whereas in recent years, the increasing level of FDI in services has drawn attention from many scholars, particularly inflow of FDI in developing countries (Shivee, Khamis, & Normaz, 2015; Newell & Kamineni, 2007). Within services, real estate industry has registered rapid change toward greater internationalization and liberalization of FDI regulations. As a result, it improves the investment environment in many countries and hence, it is clearly reflected by the growing amount of direct real estate investment and portfolio investment in this sector (Bardhan & Kroll, 2007; Newell & Kamineni, 2007).

5.3.1 Real Estate FDI determinants

Gerlowski et al. (1994) examined the location preferences of investors from Canada, Japan, and the United Kingdom for U.S. real estate between 1980-1989 using the random effect method. The empirical results indicated that states with developed, healthy, and large economies were favorable, while taxation was found to be a deterrent to foreign investment.

Moshirian & Pham (2000) analyzed the explanations behind the expansion of US FDI in the real estate sector between 1985-1995. They found that lower returns from the US stock market, improved financial wealth, and an increase in US foreign financial liabilities were factors that drove US FDI in real estate. While US FDI in manufacturing and banking, bilateral trade also were significant contributors to the expansion.

Fuerst et al. (2015) aimed to investigate how existing institutional, regulatory, and real estate specific barriers affect cross-border real estate inflows and outflows in 24 developed and emerging countries from 2007 to 2012. The findings suggested market liquidity as the most important driver for foreign capital flows, while return and macroeconomic development would enhance inflows of cross-border investments. Lastly, a transparent real estate market, easy access to the financial market, and a good economic environment were determinants that would enhance the outflows of real estate investment.

Chin et al. (2006) explored barriers to investment in the property market of five Southeast Asian cities by employing questionnaire research design, targeting researchers working in the research departments of property consultancy firms. The survey findings revealed that emerging markets such as Bangkok, Kuala Lumpur, and Taipei were perceived to be more profitable while riskier than mature markets such as Hong Kong and Singapore. Moreover, they concluded that economic and political stability, restrictions, and regulations were perceived to be the most significant factors for market attractiveness. In contrast, taxation, currency stability and convertibility, transparency of legislation, liberalization of the financial market, level of infrastructure and perceived corruption were barriers to foreign investments.

He & Zhu (2010) aimed to examine the location patterns and determinants of real estate FDI in 35 major Chinese cities in the 2000s. They found that real estate FDI was highly concentrated in the eastern coastal region, and it was more geographically dispersed compared to manufacturing FDI. Moreover, foreign investments were attracted to cities with a large population, received more international investment and tourists, more liberalized local economies, and developed land markets.

He et al. (2011) also investigated the attractive factor of the Chinese real estate market to foreign investors. Their statistical analysis indicated that foreign investors tended to avoid locations with high financial and labor costs, and favor cities with high property prices. This finding implied that foreign investors in China prioritized pursuing profit opportunities.

Fereidouni & Masron (2013) examined the effects of real estate market factors on foreign real estate investments in 31 countries between 2000-2008 by using panel data technique. The empirical findings indicated that lower financing costs (Poon, 2017; Newell & Worzala, 1995; He, Wang, & Cheng, 2011), higher property prices (Poon, 2017; He, Wang, & Cheng, 2011; Farzanegan & Fereidouni, 2014), and higher transparency (Eichhltz, Gugler, & Kok, 2011; Schulte, Rottke, & Pitschke, 2005) were found to be the general attractiveness factors to all foreign investors. Whereas the quality of infrastructure (Shivee, Khamis, & Normaz, 2015; Fereidouni & Masron, 2013; Chin, Dent, & Roberts, 2006; Gerlowski, Fung, & Ford, 1994), transparency, financing cost, property prices, landlord and tenant practices were essential determinants for emerging economies, wherein landlord and tenant practices could serve as indicators of the level of institutional quality, financial development, and maturity of the property sector in the developing country.

Farzanegan & Feredouni (2014) studied the relationship between transparency and foreign real estate investments using fixed-effect and the generalized method of moments techniques and observations from 32 countries covering 2004, 2006, 2008, and 2010. Their empirical results revealed that transparency did not have a substantial effect, whereas it was depending on its interaction with income level in the host country thus, the impact of transparency would be higher as the level of income increased. Lastly, market size, FDI in other sectors, and property prices were other significant determinants of real estate FDI.

Salem & Baum (2016) identified the main determinants of foreign direct real estate investments in the commercial real estate sector in selected Middle Eastern and North African (MENA) countries between 2003-2009. They found that real GDP growth, real estate market size, human development, quality of institutions, and growth of unemployment turned out to be positively correlated with real estate FDI. More importantly, political stability appeared to be the main explanatory factor for attracting FDI in the MENA region.

Fereidouni & Al-mulali (2012) investigated the link between international tourism and real estate FDI using panel co-integration and Granger Causality techniques of selected OECD countries. They found

a causal relationship between tourism and foreign real estate investment, where the development of the tourism industry would lead to an increase in the amount of foreign investments in real estate. In turn, increased inflows of foreign investment in real estate would further promote the tourism industry, as foreign investors could sustain or provide more tourism capacity such as hotels, attractions, entertainment, and transport facilities.

By contrast, Poon (2017) examined the key factors affecting real estate FDI in the UK using the panel regression method. She revealed that GDP and house prices had a positive impact, whereas wage, land price, and interest rate had the opposite effect. Furthermore, tourists turned out to have an unexpected negative impact on FDI in the UK real estate, but insignificant. This could be explained by the purpose of foreign investment in the country, which was mainly for financial gains.

While in Spain, Rodríguez & Bustillo (2010) proposed modeling of foreign real estate investment using time series data from 1990 to 2007. Apart from GDP per capita, expected capital gains, and house price, tourism was also found to have a positive impact on foreign real estate investment by which could be due to the fact that foreign buyers purchased properties for the attractiveness of the country as a holiday destination. On the other hand, interest rate and capital gains were important financial determinants, implying that previous visitors from high-income countries sought to obtain higher future returns while taking the current price of houses into consideration.

5.3.2 Risk and Uncertainty

Lee (2011) analyzed risks of investing in the real estate markets of the Asian region, particularly investment risk, currency risk, political risk, and institutional risk based on survey data. He argued that currency and political risks were less important in the long view, as the fluctuations in the foreign exchange rate would seek to achieve equilibrium between countries in terms of inflation and interest rate differentials, which would then lead to a neutral effect in the long run. Meanwhile, currency risk did have a substantial impact on the rate of return in the short and/or medium run. More importantly, institutional risks, maturity, and transparency remained the main barriers to foreign investors in the Asia region. As a consequence, the Asian property market seemed to be less attractive to institutional investors until the condition had been improved to an acceptable level.

Alfaro et al. (2008) attempted to investigate the explanations behind the lack of capital flows from developed countries to developing countries. They revealed that institutional quality was the leading explanation. Hence, the finding suggested pursuing policies that aimed to strengthen institutions including protection of property rights, reducing corruption, bureaucratic quality, and law enforcement in developing countries.

Lim et al. (2015) investigated how property investors of different cultural backgrounds influenced decision-making behavior regarding overseas property investment. They revealed that investors tend to invest in countries in the same geographic region due to the degree of cultural similarity hence, the surveyed Singaporean companies were more likely to invest in the Asian region than investors from the UK.

Jung, et al. (2013) also supported the previous finding. Their study aimed to discover behavioral patterns of foreign investment which were different from local Vietnamese investments. Evidence indicated that foreign developers tended to cluster together, and the apartments built by foreign investors were larger and more expensive. They also revealed that the inability of foreign investors to penetrate the Vietnamese property market was due to the lack of understanding of the local culture, lifestyle, and, climate conditions. In contrast, their local counterparts had the advantage of possessing a strong business network, familiarity with local governance, and being cost-competitive.

Eichhltz et al. (2011) investigated the importance of market institutions for the performance of international property investors in 35 countries during the 1996–2007 period. They found that foreign investors underperformed local firms in the early years in the sample period due to the political environment, economic integration, and transparency of the real estate market in the host countries. Whereas the underperformance disappeared in the later years, suggesting the importance of enhanced marker institutions to international investors.

Newell and Worzala (1995) examined the decision-making processes used in considering international property investment opportunities by institutional investors in Southeast Asia using surveys. The results showed that the problems associated with overseas property investment ranked by the respondents. Currency uncertainty appeared to be the one with the highest score, followed by management and operation issues, taxation, identifying available overseas property acquisition, uncertainty caused by politics, cultural/language, lack of local expertise, and lastly increased transaction costs.

5.3.3 The Effects of FDI in Real Estate

Masron & Fereidouni (2012) investigated the impact of FDI in the real estate sector on economic growth in 22 developing countries including the Philippines. Evidence indicated that real estate FDI had a positive effect on economic growth, and as the real estate sectors have recently emerged as one of the popular service industries for receiving FDI thus, its contribution to economic growth would be greater in the future.

Fung et al. (2010) aimed to explore the importance of real estate FDI on economic growth in China. They argued that foreign and domestic investments in the Chinese real estate industry had played an essential role in the growth of the economy, and the development of this industry would stimulate other

sectors hence, the interdependent relationships formed a cycle of growth. Therefore, the increasing construction projects would lead to higher demand for machinery, steel, electronics, chemical products, and other related products.

This is consistent with the recent empirical study done by Doytch & Uctum (2019) with the purpose of examining the effect of FDI inflows in 14 Asia Pacific economies. Their findings supported that services FDI as a whole and in particular, financial services FDI did have a positive and significant effect on economic growth, in contrast to manufacturing FDI that showed no impact. In their earlier study, they examined the effect of manufacturing FDI and services FDI on their own sector growth, spillover to other sectors, and effect on economic growth with the time period of 1990-2004. Their findings confirmed the growth effect, but a surge in service FDI hampered manufacturing activities as non-financial services drained on resources, while financial services FDI enhanced economic growth positively through stimuli in economic activities in both manufacturing and service sectors in the Southeast Asia and the Pacific region (Doytch & Uctum, 2011).

In addition, the relation between human capital and foreign direct investment was examined. Basu & Yao (2009) found a significant effect of human capital formation by the presence of foreign firms that resulted in a positive impact on the enrollment in higher education in China, as investments increased the demand for property specialists such as analysts and architects. Shivee et al. (2015) investigated the determinants of FDI in services in ASEAN economies between 2000-2010 employing a log linear model. Apart from the above-mentioned determinants, they also found human capital to be an important factor, suggesting that the more qualified the labor market, the more attractive the host country appeared to foreign investors. In turn, FDI would further increase the quality of human capital in the host country through spillovers in terms of training, working experiences in foreign enterprises, and among others.

Furthermore, Lamia (2011) examined the spillover effects in the services/construction sectors in Switzerland from 2002 to 2005. The findings indicated that the determinant of spillovers was depending on the level of technological competences of the domestic firms. Thus, high-technology firms benefited more from competition-related spillovers from the presence of FDI by which the domestic firms were forced to introduce new technologies in competition with foreign enterprises. While mid- and low-tech firms would benefit from demonstration effects, where the domestic firms would adopt and imitate the advanced technologies from foreign firms. However, there was no statistical evidence showing the spillovers from worker mobility such as MNC-specific knowledge obtained through training or by working in foreign affiliate. This could be explained by the fact that the resources low-technology services/construction firms spend on human capital might be insufficient to exploit foreign technologies. Nonetheless, the worker mobility effect might be limited to a regional dimension, suggesting that domestic firms near foreign firms might be more advantageous as knowledge would be

transmitted more efficiently at lower costs compared to longer distances. Finally, human capital was found to be the co-determined factor for high- and mid-technology firms.

Moreover, Gorodnichenko et al. (2014) tested the impact of FDI on the efficiency of domestic firms using firm and national-level data from 17 transition economies. They revealed that well-established companies and services firms would have significant efficiency gains through interactions with foreign competitors in the domestic market. It was argued that foreign firms transferred knowledge directly to domestic firms in a downstream relationship. Whereas there was no incentive for spillovers for upstream or competitive domestic firms. Moreover, FDI from advanced economies did not ensure higher efficiency spillovers, whereas FDI from developing countries was more likely to create a stronger spillover effect.

Nevertheless, there might be trade-offs regarding the consequences of increasing property price caused by rising foreign investment in real estate. However, Fereidouni et al. (2014) examined the interrelationship between FDI in real estate, economic growth, and property prices in selected OECD countries from 1995 to 2008 applying panel cointegration technique. They did not find statistical evidence for the appreciations in property prices were caused by FDI in the real estate sector neither in the short term or long term, whereas the considerable increase in property prices in the selected OECD countries were influenced by economic growth rather than inflows of FDI. Likewise, higher property prices did not cause a greater amount of foreign investment in real estate, and real estate FDI did not contribute to growth in the economy.

Similarly, Fereidouni (2013) conducted an empirical study with the same purpose based on 21 emerging countries from 2000 to 2008 using panel VAR model. Their results confirmed a significant relationship between FDI and house price, implying that FDI did cause an increase in house prices in emerging economies, but it only played a minor role in house price appreciations, while fluctuation in the property market was the main source of price movement in developing economies.

6. Research Design and Methodology

6.1 Quantitative Analysis

This study focuses on FDI inflows in the real estate industry of the Philippines for which reasonable time series data are available. It employs a quantitative approach to help establish correlations between given variables and outcomes and allow others to validate the findings of this study and independently replicate our analysis (Dudwick et al., 2006). Although we originally designed this study to be qualitative research with semi-structured and open-ended interviews with industry experts to produce an in-depth analysis based on experiential knowledge, which is vital for examining complex issues of causality, process, and context, but due to the unfavorable conditions that occurred during the research

timeframe (i.e. COVID-19 that led to enhanced community quarantine in Luzon, Philippines, where all of our interviewees were located, diverted their attention to the most critical issues their companies were facing at that time), we opted to switch our efforts towards a quantitative method of research. While this method was chosen out of necessity and convenience, this study benefits from the legitimate quantitative data that was collected rigorously as well as by following the preestablished routines and strategies, which then help uphold impartial and objective research standards (Dudwick et al., 2006). In addition to objectivity in the overall research process that enables us to generalize findings, we can also truly focus on describing and explaining the phenomenon in a definitive manner (Metler, 2016). Therefore, quantitative methods are suitable for measuring levels and changes in impacts as well as for drawing inferences from observed statistical relations, which we believe is sufficient in tackling our research problem. By conducting such research, we can avoid the pitfalls of a qualitative study such as small, non-random sample that extrapolating findings to the wider population becomes a challenge, and the likelihood of selecting groups in an idiosyncratic manner, which then makes the results of a qualitative study difficult to replicate and be independently verified (Dudwick et al., 2006).

In conducting a quantitative research, the approach we will take is a correlational research, which aims to discover and measure the relationships between two or more variables. Through a proper interpretation of correlation coefficients that allows us to conclude the nature and strength of these relationships, we will be then be able to comprehend the phenomenon under investigation, predict future conditions, while exhibiting the possibility of obtaining strong suspicions that one variable may be causing the other (Metler, 2016), without going so far to prove these causality effects. Therefore, variables will not be manipulated and will only be studied as they occur in a natural setting. It is however critical that the results of a correlational study are not misinterpreted as an implication of causation between two variables, but rather the magnitude and direction of their relationship. According to Metler (2016), the reason for this is that there are likely to be additional variables that have causal influences but were not included in the study at hand.

Despite the simplicity of this research design, a quantitative research usually requires a large sample size to be effective but unfortunately, there is a lack of data available, skills, and resources that are typically present in developing countries such as the Philippines (Choy, 2014). For this reason, we ensure that the limited data we have on hand exhibit sound validity and reliability necessary to draw generalizable conclusions about the relationships between the variables. For instance, our choice of variables and their respective proxies was guided by the relationships previously learned and confirmed by existing empirical studies. We also conformed to the strategies and various econometric techniques commonly used by these empirical papers in order to cope with the many problems of highly imperfect data and guarantee the validity of our quantitative study (Bettis et al., 2014). To ensure reliability of our data and empirical results, we collected data from main governmental offices such as the Philippine Statistics Authority (PSA) and Bangko Sentral ng Pilipinas (BSP) that periodically report official

national statistics, as well as the Philippine Institute for Development Studies (PIDS) that maintains an updated database on key economic indicators. We also obtained data from the in-depth statistical database of World Bank and Euromonitor International. We still do acknowledge the limits of our research design and make a diligent and honest effort to minimize the effect of having limited data that hindered us from conducting a thorough quantitative evaluation.

Owing to the fact that our research topic has not yet been studied at length, this empirical study will include both components of confirmatory and exploratory research. According to Behrens (1997), these two modes are complementary and therefore, essential in exploring possible interactions. The utilization of both data analysis techniques would help maximize our confidence in the conclusions of this study. The existing theories and several empirical studies reviewed earlier help provide a useful frame for a baseline argument. This paves the way for a confirmatory analysis that will help determine if the theoretical hypotheses are supported by facts. This analysis will therefore confirm previous findings as well as the examined relationships using the same established methods. By doing so, it enables us to start with clear hypotheses while minimizing Type I error[9] (Butler, 2014). This also serves as a guidance for data collection and also help us provide statistically significant results and definitive answers to hypotheses. However, deviations from previous studies are likely to arise due to the minimal similarities shared between our focus market, the Philippines, and among the focus regions studied by previous empirical papers. Therefore, it is still imperative to follow this analysis with an exploratory research method to reinforce confirmed conclusions as well as to obtain a better understanding of the motivations behind potential relationships observed in the Philippine real estate market, without affecting the analysis of the confirmatory hypotheses and minimize Type II error[10] (Butler, 2014). This enables us to entertain and suggest numerous hypotheses based on the data, with or without theoretical grounding as well as determine a "best" set of variables or the "best" model for a sample (Behrens, 1997). As a consequence, it requires careful interpretation of results derived from this part of the analysis due to theoretical uncertainties. After all, the goal of this type of research method is to listen to the data in as many ways as possible until patterns are apparent. This also calls for multiple regression analysis that can be applied in order to examine a diffuse set of research questions with reference to many variables, included in one or more different models, without explicit theoretical justification (Bettis et al., 2014).

We chose to work with time series data over a panel data despite the short historical period of 2005-2019 because we would like to have a single-country viewpoint that will enable us to understand the problem we have on hand. This could be one of the reasons why there are few published empirical studies on FDI in the Philippines, as researchers often resort to panel data to cope with lack of data and

[9] Type I error is a hypothesis testing mistake when null hypothesis was rejected when it is in fact true (Wooldridge, 2016).

[10] Type II error is the other type of hypothesis testing mistake that failed to reject the null hypothesis when it is actually false (Wooldridge, 2016).

end up analyzing a set of countries (i.e. Philippines as one of the ASEAN members or one of the many developing countries analyzed), but their findings may not provide significant explanations of the phenomenon specific to the country due to the generalizations inherent in their results, thus their recommendations on policymaking may not be applicable to the Philippines. More so that the FDI in the real estate industry is mainly driven by demand as noticed from the earlier empirical studies on different countries. For instance, demand in tourism services drives real estate FDI in Spain (Rodríguez & Bustillo, 2010), while low political risk attracts real estate FDI in the MENA region (Salem & Baum, 2016), and the presence of US manufacturing firms drive US real estate FDI in that host country (Moshirian & Pham, 2000). Following this rationale, we can argue that the inflow of foreign investments in the real estate industry of the Philippines must have its own unique set of determinants that were not yet recognized nor examined by previous empirical studies. However, we acknowledge that since time series modeling focuses more on finding a specification that captures the observable dynamic behavior without requiring a theoretical explanation for that behavior, our models should then be regarded as useful approximations to complex real-world phenomena that will be helpful in predicting future realizations (Becketti, 2013).

Furthermore, annual data is preferred over monthly and quarterly data because these higher frequency data display a strong seasonal pattern, which can be an important factor in a time series analysis (Wooldridge, 2016). Plus, higher frequency data is not available for almost all variables examined in this study.

Most of the variables included are macro- and industry-level determinants. We do acknowledge that analysis of FDI decisions at a firm-level would be beneficial in explaining the increasing FDI inflows in Philippines' real estate market, but due to the limitations mentioned earlier, we will leverage the data available and the originality of our work in this quantitative research to provide a better understanding of our research problem and contribute to the existing FDI theories and literature.

6.2 Methodology

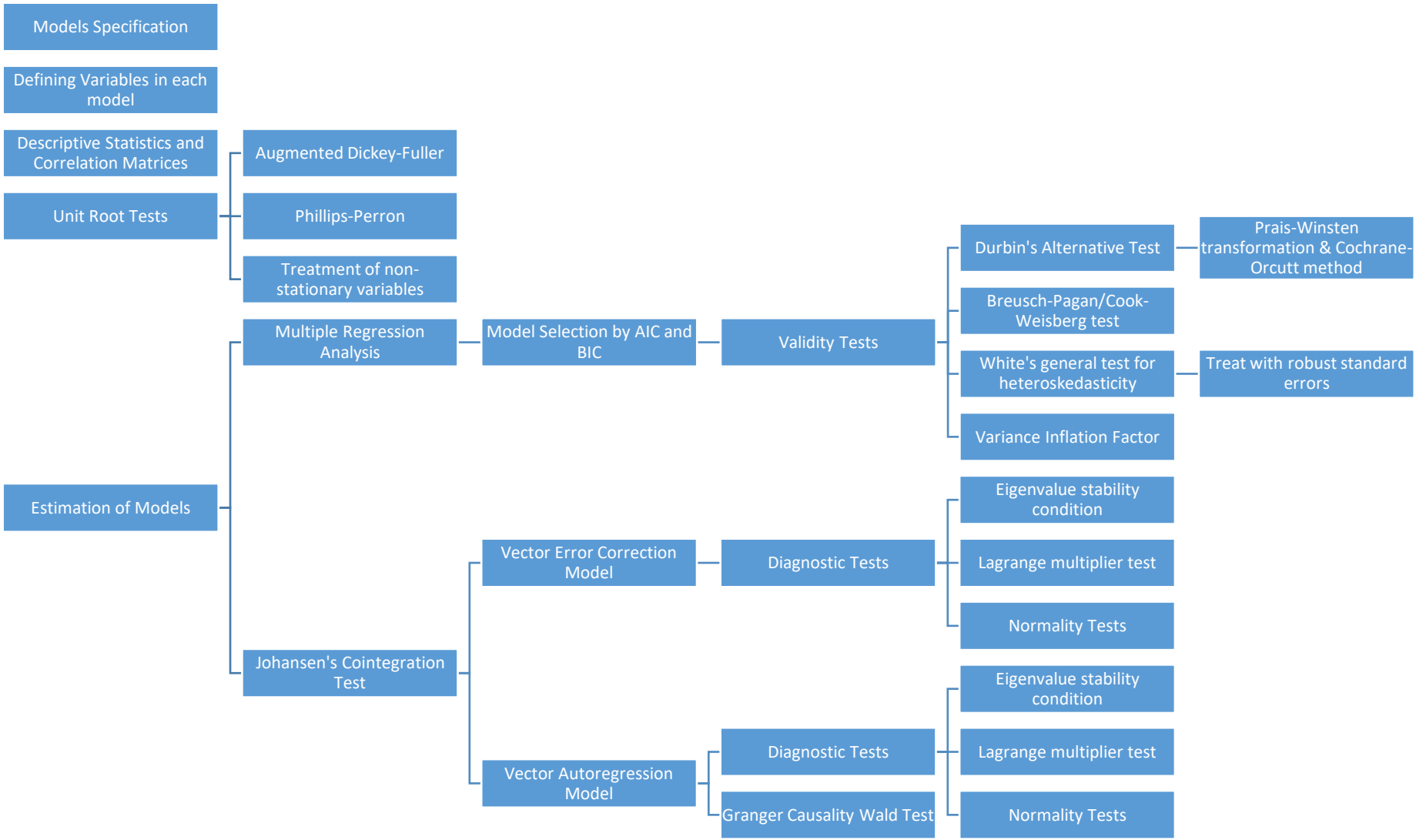
As described before, quantitative research is fairly well established that involves linear steps constituting preestablished routines and strategies to enhance objectivity and therefore allowing generalization of the findings (Metler, 2016).

First, we identified the problem that emerged from the phenomenon of increasing real estate FDI in the Philippines. Due to the novelty of the issue we have at hand, we approached it systematically by understanding first the FDI inflows as a whole that encapsulates our focal industry. Therefore, based on the most-cited literature on FDI, we were able to identify traditional determinants to be validated with Philippine data. In doing so, this study will also offer insights into this broader and more general FDI phenomenon in the country. We will then test if these determinants can also be used in explaining

the levels of FDI in real estate. This process will provide us with a baseline model to work on as well as a preliminary understanding of the topic. Moreover, it allows us to confidently proceed to the core of this study.

As we would like to test hypotheses and measure relationships between determinants, it was important to choose the variables based on some logical rationale thus, we were guided by two considerations: the relevance of the variables in question from an empirical and theoretical perspective, set of determinants likely to be significant in explaining real estate FDI in the Philippines, and the availability of time series data. Second, our review of related literature was proven to be useful in identifying strategies for conducting our study as well as in deriving our confirmatory hypotheses and predicted outcomes based on what has previously been learned about the relationships among our variables. It has also provided guidance in the manner we collected our data that guarantees appropriate measurements and proxies for each of our variables. In other words, this study follows the standard methodology most commonly used among the previous empirical literature on real estate FDI. Lastly, the following processes and econometric techniques are going to be used to help us estimate and analyze our collected data.

Figure 35: Road Map of Analytical and Estimation Methods



6.2.1 Data Analysis and Estimation Techniques

First, we present summary tables and descriptive statistics as many primary relationships are evident in contingency tables and correlation matrices (Bettis et al., 2014).

Because past events can influence future events in a time series data, meaning they are often strongly related to their recent histories (Wooldridge, 2016), we have to make sure that variables are stationary, wherein probability distribution, mean and variance do not change over time and do not follow any trends. This guarantees a stationary time series in which there is no presence of a unit root that implies that a shock today has a long-lasting impact. Therefore, we use two types of unit root tests: Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP), to decide if a unit-root specification provides a reasonable approximation for the variable of interest. These tests assume that there are individual unit root processes across the time series. An ADF test with ρ lags would be a regression: $\Delta y_t = \gamma y_{t-1} + \beta_1 \Delta y_{t-1} + \cdots + \beta_\rho \Delta y_{t-\rho} + \varepsilon_t$, where the test statistic is the t ratio for $\hat{\gamma}$ and we select ρ to be large enough that the error term ε is white noise. This tests whether a series is a random walk, with the alternative being a stationary process. However, rather than figuring out how many lags should be included in the ADF specification, the PP test uses the OLS t test and uses the Newey-West procedure to correct the standard errors for autocorrelation (Parker, n.d.).

If a variable turns out as a nonstationary, it will be treated by differencing. According to Granger and Newbold (1974), there is strong evidence that regressions involving random walks are spurious when performed on the levels, but not on the differences. As a result, first differencing eliminates possible unit roots as well as serial correlation (Wooldridge, 2016). In this case, it is important that the dependent variable is also nonstationary as it cannot follow an integrated explanatory variable on its nonstationary wanderings, indicating that the model is misspecified. Note that it is possible to have a mixture of integrated and stationary regressors in the models (Parker, n.d.).

Then, a multiple regression analysis will be conducted to assess the role of specific variables while holding other variables constant. Multiple regression models can accommodate many explanatory variables, such as in our case, that may be correlated and useful in explaining the variation in our dependent variable (Wooldridge, 2016). Meanwhile, the method of ordinary least squares (OLS) will be used in estimating the parameters of our multiple regression models, while taking into consideration the justification for OLS estimators rely on various assumptions.

Subsequently, we will compare the models fitted on identical samples and select the one that gives the best description of the current data using information criteria such as Akaike's Information Criterion (AIC) and Bayesian Information Criterion (BIC). Both information criteria can be recognized as a penalized log likelihood, which balances model fit in the form of the log likelihood and model complexity in the form of the dimension of the model (Hamaker et al., 2011). They are based on the idea that models are mere approximations of the truth. Thus, we will select the model with the smallest

value as it indicates the best-approximating model given the set of models under consideration and has the least information loss relative to the true model. Minimizing the value of AIC and BIC can produce negative values, which implies less information loss than a positive value hence a better model (Baguley, 2012).

Even though the selected model may not have any underlying misspecification, its errors may contain serial correlation and heteroskedastic. Since we need to satisfy the classical assumptions that support OLS estimator as the best linear unbiased estimator (BLUE), we need to correct the standard errors for forms of serial correlation and heteroskedasticity, especially when it is expected that error terms in time series data are usually autocorrelated, making the OLS estimates inefficient (Parker, n.d.). Therefore, we will use Durbin's alternative test to check for serial correlation as it provides a formal test of the null hypothesis of serially uncorrelated disturbances. We chose this test over the older Durbin-Watson test because it is unlikely to fall into a zone of uncertainty, can accommodate lagged dependent variables, and p-values are readily calculated (Becketti, 2013). If we reject the null hypothesis, we then have to proceed to correct for autocorrelation using the Prais-Winsten estimator to improve the efficiency of the coefficient estimators, therefore producing better estimates of the residuals. Prais-Winsten transformation is iterative as it recalculates ρ_1 based on FGLS residuals then calculates the transformed variables and more efficient coefficient estimators from regression and it only stops when the estimates converge, guaranteeing better coefficients and residuals, finally improving efficiency in small samples. Moreover, we will also consider the option of the Cochrane-Orcutt estimator that estimates $\rho_1$the same way but omits the first observation (Parker, n.d.).

Only after we correct for serial correlation can we test for heteroskedasticity because the former will generally invalidate a test for the latter (Wooldridge, 2016). One of the assumptions of OLS is that the variance of the error term is constant (homoskedastic). This occurs when there is a measurement error or misspecifications such as instead of using Y, we should be using the log of Y or we omitted important variables from the model.

We will use the Breusch-Pagan/Cook-Weisberg test to detect any linear form of heteroskedasticity. It tests the null hypothesis that the error variances are all equal versus the alternative that the error variances are a multiplicative function of one or more variables. If we reject the null then heteroskedasticity is present thus, standard errors are biased and in turn, leads to bias in test statistics and confidence intervals and OLS estimates are no longer BLUE. In addition, since this test only works for linear forms of heteroskedasticity, it encounters problems when the errors are not normally distributed. Therefore, we will also use the White's general test for heteroskedasticity to add a lot of terms and test for more types of heteroskedasticity hence, relaxing the assumption of normally distributed errors (Williams, 2020). To deal with this, robust standard errors will be used to address the

problem of errors that are not independent and identically distributed. By doing so, standard errors will change while keeping the coefficient estimates, giving test statistics with reasonably accurate p-values.

Furthermore, it is also necessary to test for multicollinearity that may be caused by having two or more independent variables in the model being highly correlated with one another that results in standard error equivalent to infinity (Wooldridge, 2016). As a consequence, it becomes more challenging to determine which variable is actually influencing the dependent variable. Plus, the greater the multicollinearity, the greater the standard errors thus, reducing tests of significance. However, even if the model suffers from the issue of multicollinearity, OLS remains BLUE and does not violate any of its assumptions (Williams, 2015). One simple way to detect its presence is by checking if the correlations between two variables are in the 0.9's, which indicates a high correlation (Ender, n.d.). Moreover, we will also examine the tolerances or variance inflation factor (VIF), which shows how much the variance of the coefficient estimate is being inflated by multicollinearity. A rule of thumb is that VIFs of 10 or higher should be inspected (Williams, 2015).

In some cases, groups of nonstationary variables may obey a long-run relationship with each other whose residual is stationary. For instance, two or more variables may have common underlying stochastic trends along which they move together on a nonstationary path hence, they tend to return back to a stable, constant value after being distributed by a shock (Parker, n.d.).

We will then use the Johansen tests to look for the possibility of multiple long-run equilibrium relationships, otherwise known as cointegrating relationships, based on maximum likelihood techniques. According to Engle and Granger (1987), cointegration implies the existence of an error correction model (ECM), which connects the long-run equilibrium relationship with the short-run dynamic adjustment mechanism that describes how the variables react when they move out of long-run equilibrium. Therefore, a vector autoregressive (VAR) model may not be the suitable representation for analysis if such relationships are apparent, and so, it is useful to fit a vector error correction model (VECM) instead (Zivot, 2006). A VECM for two variables might look like:

$$\Delta y_t = \beta_{y0} + \beta_{yi}\Delta y_{t-1} + \cdots + \beta_{yp}\Delta y_{t-p} + \gamma_{y1}\Delta x_{t-1} + \cdots + \gamma_{yp}\Delta x_{t-p} - \lambda_y(y_{t-1} - \alpha_0 - \alpha_1 x_{t-1}) + v_t^y$$

$$\Delta x_t = \beta_{x0} + \beta_{xi}\Delta y_{t-1} + \cdots + \beta_{xp}\Delta y_{t-p} + \gamma_{x1}\Delta x_{t-1} + \cdots + \gamma_{xp}\Delta x_{t-p} - \lambda_x(y_{t-1} - \alpha_0 - \alpha_1 x_{t-1}) + v_t^x$$

$$\text{Cointegrating relationship: } y_t = \alpha_0 + \alpha_1 x_1$$

The Johansen's methodology starts with specifying and estimating a Var(p) model for the dependent variable. Then, it will construct a likelihood ratio test with the null hypothesis stating that the number of cointegrating relationships, *r*, is equal to zero. If rejected, it will test *r* = 1 and continue until the null

is accepted. By doing so, we will be able to determine the number of cointegrating vectors. It also includes an assortment of information criterion tests to identify the value of *r* that minimizes the SBIC, HQIC, and AIC criteria, which then avoids the multiple-testing issue that arises as the nominal sizes of the maximum eigenvalue tests will not correspond to the actual size of the test. It is important to take into consideration that the test statistics are sensitive to the choice of trend specification (impose normalization and identify restrictions) and lag length. As we have to challenge our hypotheses as rigorously as possible, we will fit several specifications to the data to determine how sensitive the estimates of the relationship of interest are to the variations in model form. If the estimates are robust to variations in specification, our confidence in our hypotheses increases (Becketti, 2013).

Lastly, we need to check if our VECM is stable, no autocorrelation in its residuals, and no evidence of nonnormality. If our VECM has *K* endogenous variables and *r* cointegrating vectors, there should be *K* – *r* unit moduli in the companion matrix. Otherwise, it may be possible that the cointegrating equations are not stationary, there is another common trend, or the rank specified is too high. Moreover, we will utilize the Lagrange multiplier (LM) test for autocorrelation. The test is performed at lags $j = 1$ until the maximum order of autocorrelation, with the null hypothesis that there is no autocorrelation at every lag *j*. Finally, we will use three tests that report a series of statistics against the null hypothesis that the disturbances in our VECM are normally distributed: Jarque-Bera, Skewness, and Kurtosis test. If we fail to reject the null, there is a lack of model misspecification.

However, if cointegrating relations do not explicitly appear in the model, we will then opt for structural analysis of the VAR model to describe the dynamic behavior of our time series and evaluate the impact of independent variables on the dependent variable. VAR modeling involves modeling several series in terms of their own past. An example of a VAR system with two variables and an order *p:*

$$y_t = \beta_{y0} + \beta_{yy1} y_{t-1} + \cdots + \beta_{yyp} y_{t-p} + \beta_{yx1} x_{t-1} + \cdots + \beta_{yxp1} x_{t-p} + v_t^y$$

$$x_t = \beta_{x0} + \beta_{xy1} y_{t-1} + \cdots + \beta_{xyp} y_{t-p} + \beta_{xx1} x_{t-1} + \cdots + \beta_{xxp1} x_{t-p} + v_t^x$$

Fitting a VAR(p) model starts with lag length selection by choosing the value of p which minimizes some model selection criteria (Zivot, 2006). Once we obtain the β coefficients from OLS estimation, similar to VECM, we have to also test the VAR model for stationarity in which all the eigenvalues of the companion matrix must lie inside the unit circle. If this condition does not hold, then the VAR implies that the effects of shocks do not die out, hence they are permanent shocks. In addition, we will perform the LM test with the null hypothesis of no residual autocorrelation and a variety of normality tests to check whether the VAR disturbances are normally distributed (Becketti, 2013). We will also attempt to infer information about the direction/s of possible causality between pairs of variables using the Granger causality analysis. This test asks whether past values of x aid in the prediction of y_t conditional on having already accounted for the effects on y_t of past values of y and if they do, the x is

said to Granger cause y (Parker, n.d.). The null hypothesis is that x does not Granger cause y in the VAR model. However, interpreting this test requires an assumption that the future cannot cause the present thus, we will interpret the results very carefully in a way that the expectations of future variables, which are likely to be correlated with the future variables themselves, can influence the present choices, consequently resulting in causality. Moreover, since Granger causality only measures the lagged effects, it does not fully capture the dynamic causal relationships within a period (Parker, n.d.).

Since higher frequency data is available for our dependent and some explanatory variables, we will also conduct the same analysis and methods with the use of quarterly data. Moreover, we will apply the Denton method to obtain the quarterly figures of those variables that are deemed to be necessary for the model but do not have the same frequency data available. This technique involves the interpolation of a low-frequency time series by use of an associated higher-frequency indicator series, imposing the constraints that the interpolated series obeys the original low-frequency series totals (Baum & Hristakeva, n.d.). However, if a time series is observed at quarterly intervals, it may exhibit seasonality (Wooldridge, 2016). The issue with seasonality arises when seasonal variations dominate period-to-period changes in the original series that make it difficult to identify long-term movements or cyclical variations that carry the most important economic signals (IMF, 2017). Therefore, those variables that exhibit seasonality will be adjusted using the X-13ARIMA-SEATS method[11], developed and promoted by the US Census Bureau. The purpose of seasonal adjustment is to identify and estimate the different components of a time series, which then allows comparisons between quarters without the influence of seasonal effects (IMF, 2017).

Lastly, prior to estimations, variables were converted to PHP million with the corresponding average exchange rate for that particular period taken from the BSP database. Therefore, it should be taken into consideration that the significant changes in these converted variables might be mainly driven by the fluctuations in USD/PHP rate. In addition, we transformed our variables into their natural logarithm, while for those variables with zero or negative values, we added an arbitrary constant before applying the log transform, for example, $\log(1+y)$. The benefit of using natural logs leads to coefficients with appealing interpretations, and we can be ignorant about the units of measurement of variables appearing in logarithmic form because the slope coefficients are invariant to rescaling. Moreover, taking the log can eliminate the heteroskedastic distributions of positive variables. Narrowing the range of our variables can make OLS estimates less sensitive to outlying (Wooldridge, 2009). Although logged data does not necessarily have any improving effects on the data quality nor add any additional information but rather only rearranges the information which was already present, it can sometimes represent the

[11] Implements the two most widely used seasonal adjustment methods: the moving average X11 method and the ARIMA model-based SEATS method originally developed by Victor Gomez and Agustin Maravall of the Bank of Spain.

most accurate interpretation of the series we are trying to model (Jenkins G. , 1999). However, it is important to remember that we can only compare models with both log(*y*) as the dependent variable.

7. Data and Variables

7.1 Dependent Variables

In this study, we will be using two dependent variables, *totalfdi* and *refdi*. With the aim of validating existing FDI theories, we will first find out what determines FDI in the Philippines. The dependent variable *totalfdi* is the total net FDI flows in the country reported by BSP on a monthly basis. This comprises of non-residents' net equity capital (i.e. placements less withdrawals) plus reinvestment of earnings plus debt instruments (i.e. net intercompany borrowings). Net FDI inflows are used instead of aggregate stock inflows to minimize the effect of exchange rate levels and inflation on the value of retained earnings, profits, reserves, and other foreign investments in the country as well as to guarantee the exclusion of stock outflows, which are the investments made by Philippine companies overseas.

Since BSP also publishes the FDI inflows into each sector, we were able to gather the data needed to represent our variable of interest in the remaining three models, *refdi*, which is the net FDI inflows in the real estate industry. Figures from 2005 to 2009 were based on Section K of 1994 PSIC and starting from 2010, BSP shifted to the 2009 PSIC, thus real estate activities are now included in Section L. Therefore, observations for both variables start later than 2005 and ends in 2019.

7.2 FDI Determinants

7.2.1 Market Size

Market size has come out in nearly all empirical studies on the determinants of FDI as mentioned in the literature review. According to Artige and Nicolini (2006), market size measured by GDP or GDP per capita appears to be the most robust FDI determinant as foreign investors will move to countries with larger and expanding markets. This is oftentimes translated into greater purchasing power that can potentially provide foreign firms a higher return on their capital and ultimately receive higher profit from their investments. Schneider and Frey (1985), Tsai (1994), and Asiedu (2002) all argue that a higher GDP per capita implies better prospects for FDI in the host country.

For these reasons, we will be testing the variables *gdp*, and *gdpcap* (GDP per capita) to know whether the expansion of market size tends to stimulate the attraction of FDI into the Philippine economy. Both quarterly and annual data of GDP from 1998 until 2019 is available in the PSA database. We will use the figures expressed in constant prices, with 2000 as the base period, in order to remove the impact of price changes and show the volume change in GDP (Eurostat, 2014). *gdpcap* is calculated by dividing

gdp by the population for the corresponding year reported by BSP every quarter and year. The expected sign for all market size variables is positive.

Traditional FDI Hypothesis 1: Higher GDP and GDP per capita implies a bigger market size that would lead to greater total FDI inflows.

7.2.2 Economic Stability

The volatility of macroeconomic policy creates both problems and opportunities for foreign firms, forcing them to manage the risk inherent in developing countries thus, increasing its cost of capital and negatively affect its profitability, but also presenting them with the opportunity to move production to lower-cost facilities with lower labor costs. According to Baniak et al. (2005), higher variability and volatility of macroeconomic fundamentals that lead to economic instability reduces the flow of FDI. In the empirical studies done by Demirhan & Masca (2008) on the determinants of FDI in developing countries, they propose that low inflation rates, as an indicator of economic stability, have been effective in attracting FDI to developing host countries. High inflation rate, therefore, stems from irresponsible monetary and fiscal policies that discourage the flow of FDI as it creates more business risks. This is further supported by Onyeiwu & Shrestha (2004), and Ali et al. (2010).

Therefore, we will use the variable inflation rate, *infrate*, as a proxy for economic stability. Annual and quarterly data from 1977 to 2019 are taken from the Euromonitor International database. The expected sign is negative.

Traditional FDI Hypothesis 2: Higher inflation rates indicate instability in the economy, which would discourage total FDI inflow in the country.

7.2.3 Labor Cost

Many studies have explored the role of wage in attracting FDI including Tsai (1994) who was the first one that tested cheap labor hypothesis using cross-country data and found out that the increase in labor cost does discourage FDI. A much earlier study by Schneider and Frey (1985) also suggests that the lower the wage costs, the more profitable it is to invest in the host country. According to Marr (1997), labor costs tend to be significant for those investments in labor-intensive industries and export-oriented subsidiaries. However, when this variable is insignificant, the skills of the labor force tend to have an impact on FDI instead.

We calculate the variable *laborcost* by dividing the minimum wage (1989-2019) by labor productivity (1970-2019). Annual data of both are available in the Philippine Institute for Development Studies (PIDS) database. We will be using the annual average of high and low daily minimum wage of NCR

because the other 15 regions set theirs significantly lower than NCR (PRS, 2019). The expected sign is negative.

Traditional FDI Hypothesis 3: Higher labor costs increase production costs and consequently discourage further foreign investments.

7.2.4 Degree of Openness

The hypothesis stating that a country's degree of openness to international trade is a relevant factor in investment decisions because most FDI is directed towards a tradable sector. Therefore, there is a widespread perception that open economies encourage more FDI (Marr, 1997). Studies by Demirhan & Masca (2008) and Ali et al. (2010) have supported this hypothesis and found out that countries with higher degrees of openness received more FDI. While the findings of Onyeiwu & Shrestha (2004) showed that openness is highly significant at the 1% level in both of their fixed and random effects models therefore concluding that countries with capital controls and restrictive trade policies discourage FDI inflows compared to countries with liberal policies.

To measure the variable *openness*, we followed the most commonly used method by taking the ratio of exports plus imports to GDP. This information is available in the same dataset of *gdp* from the PSA database. The expected sign is positive.

Traditional FDI Hypothesis 4: More trade activities signify a higher degree of economic openness hence, attracting more FDI inflows.

7.2.5 Tax Rate

According to Onyeiwu & Shrestha (2004), inconsistent and poorly implemented tax laws portray an unfriendly business environment that negatively affects the flow of FDI. This was earlier pointed out by the study of Chen & Tang (1986), which suggests that the nature of a country's tax law affects its ability to attract and retain foreign investors. To add, Gastanaga et al. (1998) found out that the net effects of the corporate tax rate would become negative within the range of 25-35%, hence, suggesting that host countries should consider lowering their corporate tax rates to become more competitive with other countries and attract more FDI. This is further supported by Demirhan & Masca (2008) and Ali et al. (2010).

We obtained the annual data on *corptax* from the global dataset compiled by the Tax Foundation from 1980 to 2019. The expected sign is negative.

Traditional FDI Hypothesis 5: High tax rates would lower the profit and return of FDI thus, discouraging further FDI.

7.2.6 Political Risk

The changes in government policies of a host country create market imperfections that interfere with the operations of FDI projects hence, political risks arise that often discourage further FDI inflows (Brewer, 1993). However, the empirical relationship between political instability and FDI flows remains unclear as to the estimates of those studies that turned out to be significant only captured the qualitative nature of political risk. Bénassy-Quéré et al. (2007) concluded that a host country with a high level of corruption receives less FDI than a country with a lower level of corruption. In addition, Schneider & Frey (1985) find an inverse relationship between these variables while the studies of Onyeiwu & Shrestha (2004) and Demirhan & Masca (2008) both found this relationship insignificant. According to Marr (1997), when the host country presents high returns, foreign firms often ignore political risk and continue to invest as long as they are confident of being able to operate profitably without undue risk to its capital and personnel.

The variable *corrupt,* which is the proxy for political risk, was collected from the Corruption Perceptions Index published annually from 1996 until 2019 by Transparency International. The expected sign is negative.

Traditional FDI Hypothesis 6: The less transparent the host country is perceived, the higher the transaction costs are expected, which influences investment decisions and hence deter FDI.

7.2.7 Infrastructure Quality

Poor infrastructure is mostly cited as one of the major constraints of FDI, particularly in developing countries. However, it is oftentimes seen as both a challenge and an opportunity for FDI, especially if host governments permit more substantial foreign participation in the infrastructure sector, thus attracting relevant foreign investments (Marr, 1997). Onyeiwu & Shrestha (2004) found that infrastructure is insignificant as the highest recipients of FDI in Africa also have very poor infrastructure. Meanwhile, the findings of Demirhan & Masca (2008) show that the effect of infrastructure on FDI is positive and significant. This is further supported by Ali et al. (2010) and Biswas (2002), whom both suggest that better infrastructure is capable of attracting investors to a host country.

The commonly used measurement for infrastructure quality in literature is the number of telephones per 1000 inhabitants, which will also be utilized in this study with the variable *telephone*. The figures were obtained from the database of the World Bank, which is reported annually from 1975 to 2018. However, the results must be interpreted with caution as this variable only captures the availability and not the reliability of the infrastructure (Asiedu, 2002). Nonetheless, the expected sign is positive.

Traditional FDI Hypothesis 7: Better and high-quality infrastructure would increase the efficiency and productivity of firms, which leads to the reduction of transaction costs and ultimately, attracting more FDI.

Given the 7 variables discussed above, we arrived at the basic framework of FDI determinants in the Philippines with traditional factors:

$$PHFDI = \beta_0 + \beta_1 marketsize + \beta_2 infrate + \beta_3 laborcost + \beta_4 openness + \beta_5 corptax + \beta_6 corrupt + \beta_7 telephone + \mu$$

Equation 1

The purpose of this study is also to provide more recent findings on the FDI determinants in the Philippines and find out if they remain consistent with the few past country-specific literatures. Therefore, we will also then apply the same regressors used in the previous model and the dependent variable *refdi* to test whether they can also explain the FDI inflows in the real estate industry of the Philippines.

$$PHREFDI = \beta_0 + \beta_1 marketsize + \beta_2 infrate + \beta_3 laborcost + \beta_4 openness + \beta_5 corptax + \beta_6 corrupt + \beta_7 telephone + \mu$$

Equation 2

7.3 Real Estate FDI Determinants

7.3.1 Market Size

As presented earlier, market size measured by GDP or GDP per capita is the most robust FDI determinant. This appears to be also true in explaining foreign investments in the real estate industry as according to Farzanegan & Fereidouni (2014), a higher GDP per capita captures potential economies of large-scale production such as in real estate sector. Moreover, He et al. (2011) proposed that higher GDP per capita would create demand for real estate properties thus, attracting more FDI in that industry due to higher revenues. This is further supported by Rodríguez & Bustillo (2010), Salem & Baum (2016), Fereidouni & Masron (2011), and Anop (2010).

Meanwhile, Gerlowski et al. (1994) suggested that locations with a high income and growing population would benefit from agglomeration economies making real estate more productive and valuable hence, attracting more investments. Bagchi-Sen (1995) also showed that population growth is a major determinant of real estate FDI because this sector is consumer-oriented and growth-oriented, which provides a potential for the development of market niches and profitability. However, Gholipour et al.

(2014) did not find any causal relationship between GDP and FDI in real estate, whilst Fereidouni & Masron (2013) rejected the market size hypothesis.

Therefore, we will be testing the variables *gdpcap* and *popgrowth* as indicators of market demand. The expected sign for all market size variables is positive.

Real Estate FDI Hypothesis 1a: A higher GDP per capita generates demand for real estate properties, therefore, attracting more FDI due to expected higher revenues.

Real Estate FDI Hypothesis 1b: High percentage change in population guarantees local market demand, thus creating higher revenues for foreign investors and attract more FDI in real estate.

7.3.2 Transparency

According to Eichholtz et al. (2011), real estate foreign investors may be at a disadvantage in countries with an unfavorable political environment, opaque real estate market, and a low level of economic integration. This is due to the fact that foreign investors lack local expertise and have limited access to local market information hence, they will likely pay too much and ultimately, lead to lower returns. The findings of Salem & Baum (2016) showed that transparency in real estate markets attract greater levels of foreign investors as they become more comfortable and better informed.

We will also use the variable *corrupt* as an indicator of transparency because according to Jones Lang Lasalle (2006), a real estate market is considered transparent if it is fairly free from corruption and has readily available information while operating in a fair and consistent manner. This is supported by Fereidouni et al. (2013) who proposed that low corruption decreases the expropriation risks for foreign direct investors, which in turn increases FDI in real estate. The expected sign is negative.

Real Estate FDI Hypothesis 2: There is a positive and significant relationship between real estate FDI and political stability and transparency.

7.3.3 Infrastructure Quality

Long-term real estate investors, both domestic and foreign, consider reliable infrastructure as one of their major criteria when assessing any potential real estate transaction. This was tested by Fereidouni & Masron (2013) and they found that infrastructure is indeed the main significant determinant of foreign real estate investment. However, it is only true in developed countries and not in emerging market economies. Salem & Baum (2016) reported that the role of infrastructure in attracting real estate FDI in the MENA region is not significant. In contrast, Fereidouni et al. (2013) and Anop (2010) both found infrastructure to be significant.

However, there was no consensus of proxy used to indicate the quality of infrastructure among the empirical studies mentioned above. We will, therefore, test different variables: *telephone; internet*, which is the number of internet users per 1000 persons with access to worldwide networks via home, work internet-enabled computers, internet cafes, or mobile phones. Euromonitor publishes this data yearly starting from 1994 to 2019; *eleccap,* which is the electricity output in kWh per capita reported by the International Energy Association on an annual basis from 1985 until 2019. The expected sign for all infrastructure variables is positive.

Real Estate FDI Hypothesis 3: Reliable infrastructure is a positive and significant determinant of real estate FDI.

7.3.4 FDI in other sectors

Owing to globalization, consumers of real estate have also become global. As companies from different industries expand their footprint outside their home countries, the majority of real estate service firms have accompanied these clients abroad, expanding their geographic coverage (Bardhan & Kroll, 2007). These real estate firms also forge alliances with companies across the world to provide services to the increasingly mobile expatriate population and help them gain worldwide access to residential markets. Moshirian & Pham (2000) applied the follow-the-client hypothesis in the case of FDI in real estate. They proposed that US manufacturers and banks invest in foreign real estate not necessarily for the higher rate of return they expect to receive but rather out of necessity. Their demand for investment in real estate such as office buildings, accommodations, and other facilities, in the host countries, increases as their operations expand. Therefore, real estate firms follow their traditional customers abroad. This is supported by the study done by Farzanegan & Fereidouni (2014), who concluded that countries with a higher level of FDI in other sectors attract greater amounts of foreign real estate investment.

We, therefore, deducted *refdi* from *totalfdi* in order to arrive at the figures of *otherfdi* and lagged it for one year to evaluate the strategic intent of real estate firms by considering the previous year's FDI in other sectors of the Philippines. The expected sign is positive.

Real Estate FDI Hypothesis 4: Increase in FDI in other sectors would also increase the demand for real estate in the host country, hence attracting more FDI in real estate.

7.3.5 FDI in real estate sector

Similar to the previous hypothesis, it is worth examining whether real estate firms also follow their competitors overseas as previous FDI inflow by other foreign firms serves as an indicator of market demand and profitability. This is highlighted in the study done by Ramasamy & Yeung (2010), in which

they concluded that MNCs tend to follow their competitors as they are afraid to lose market shares and competitive advantage in host countries. However, this hypothesis was rejected in the findings of Salem & Baum (2016) as it appears that the presence of real estate FDI in the MENA region, does not act as a catalyst to attract further investment.

We used a one-year lagged variable of *refdi* in order to test if the previous year's FDI in the Philippine real estate market plays an important role in attracting further FDI into the industry. The expected sign is positive.

Real Estate FDI Hypothesis 5: The presence of foreign real estate firms in the host country would attract more FDI in real estate.

7.3.6 Property Price

The value of the commercial and industrial properties is a determinant of real estate FDI because it is observed that the location of such investments is influenced by economies of concentration, which is often associated with the likelihood of appreciation of property value over time (Bagchi-Sen, 1995). Rodríguez & Bustillo (2010) assert that the unique purpose of foreign real estate investment is obtaining a higher return as explained by the increasing investments of tourists in the Spanish real estate market as these particular investors expect a future increase in the price of their acquired asset. This is supported by Fereidouni & Masron (2013), Farzanegan & Fereidouni (2014), and He et al. (2011), in which they all concluded that property prices determine the returns to capital in real estate investment, thus attracting more FDI in the host country's real estate industry.

We will use the *propprice* variable which is the residential and commercial property prices per sqm. This data is published quarterly by Bank for International Settlements (BIS) starting from 2008 until 2019. As an alternative, we will also test the proxy *housepriceindex,* which is the index of housing prices with 2010 as the base year and has both annual and quarterly figures from the year 1990 until 2019. This is available from the Euromonitor International database. The expected sign is positive.

Real Estate FDI Hypothesis 6: Higher housing prices guarantee high future returns and capital growth therefore attracting more real estate FDI.

7.3.7 Financing Cost

Real estate development is a highly capital-intensive business thus, lower financing costs would improve the returns to capital and attract more foreign developers in the host country's real estate industry (He et al., 2011). Rodríguez & Bustillo (2010) used the long-term interest rate as a proxy variable for financing costs and found that foreign real estate investment is negatively related to the

long-term interest rate. Fereidouni & Masron (2013) also asserted that interest rates could affect the ability of firms to raise capital from the financial system of host countries. To better explain this concept, Adams & Füss (2010) studied the relationship between the long-term interest rate and demand for housing. They found that a higher long-term interest rate increases the return of other fixed-income assets such as bonds relative to the return of real estate, thus shifting the demand from real estate into other assets. In addition, this is reflected in higher mortgage rates, which further reduces demand and decreases house prices, thus discouraging FDI inflows.

Therefore, we use the proxy variable *intrate*, which is the long-term interest rate in the Philippines compiled quarterly by Euromonitor International from 2000 until 2019. We averaged the quarterly figures in order to obtain the annual interest rates. The expected sign is negative.

Real Estate FDI Hypothesis 7: High interest rates would diminish the returns to capital hence, reducing the attractiveness of real estate FDI.

7.3.8 Tourist Arrivals

According to Rodríguez & Bustillo (2010), the investment in Spanish real estate by foreign investors is influenced by the knowledge gained about the attractiveness of the country as a holiday destination. They said that tourism is considered as the first step in the acquisition of a property. This is further supported by the findings of Fereidouni & Masron (2011), which reveal that the increasing number of international tourists to a country leads to higher levels of real estate FDI.

We then obtained the total number of tourist arrivals in the Philippines from 2008 to 2019, from the monthly reports published by the Department of Tourism. We also lagged the variable *tourist* to take into account the time required to learn about the attractiveness of the real estate industry of a host country. The expected sign is positive.

Real Estate FDI Hypothesis 8: The greater the number of foreign tourists to a country, the higher the chance that a tourism agglomeration will take place, leading to higher levels of real estate FDI.

Based on the 8 variables introduced above – 3 of which were from the previous FDI models and the remaining 5 are specific to the real estate industry, we have arrived at the following equation that serves as the basic framework of real estate FDI model:

$$PHREFDI = \beta_0 + \beta_1 marketsize + \beta_2 corrupt + \beta_3 infrastructure + \beta_4 otherfdilag + \beta_5 refdilag + \beta_6 propprice + \beta_7 intrate + \beta_8 touristlag + \mu$$

Equation 3

In addition, we would like to extend this model to incorporate country-specific factors based on the recent developments in the Philippines' real estate sector as these factors also influence foreign investors' location choice decisions. Therefore, we will add the variables *ofw* and *bpogdp* to this model.

We would also want to reiterate that as described in the industry overview, POGOs are believed to be more likely to dominate the demand for office real estate, as there is an increase of total office transaction from 25% in 2018 to 37% in 2019 (Bondoc, 2019 B). Although we would also like to uncover whether POGOs do have a significant effect in the country's real estate, unfortunately, there are no secondary data nor proxy that could capture this segment. This could be due to the fact that they only emerged in 2016. Therefore, POGO cannot be tested as of today.

7.3.9 Overseas Filipino Workers' Remittances

Remittances from OFWs have been increasing steadily in the last 15 years as seen earlier in Figure 14, and it has played a crucial role in the economy as it supports the income and consumption of Filipino households. According to CES in 2019, 11.7% of the 472 households that received OFW remittances apportioned their remittances for purchase of a house. Moreover, a higher percentage of OFW households utilized their remittances for education, medical expenses, savings, and purchase of appliances, and houses in the NCR compared to areas outside this region (BSP, 2019 D). Therefore, OFW remittances is a major demand driver of residential properties (Bondoc J. R., 2019 D).

BSP publishes the total amount of OFWs' cash remittances every month by country of source, from 1989 until 2019. We expect the sign of *ofw* to be positive because the higher the remittances of OFWs to their families in the Philippines, the more likely they buy properties or move into bigger houses, therefore increasing the demand for real estate, ultimately attracting FDI.

Real Estate FDI Hypothesis 9: Remittances from overseas Filipino workers (OFWs) generate housing demand thereby stimulating more real estate FDI.

7.3.10 Business Process Outsourcing Sector Growth

BPO of the IT-BPM sector continues to be one of the fastest-growing industries in the Philippines as seen previously in Figure 11, and it is expected to increase by 9% yearly by 2022 (Marketline, 2019). Hence, due to the fast expansion of BPO companies, they seek more office spaces and outsourcing firms including call centers and shared service providers, which accounted for nearly 50% of total office transactions in 2019. Therefore, this sector is expected to be one of the major drivers of office growth in the real estate sector (EMIS, 2018/2019).

BSP surveyed IT-BPO services and reported the annual revenue figures of the sector from 2004 until 2013. The IT & Business Process Association (IBPAP) published a roadmap 2022, wherein they reported the annual revenue of the sector from 2014 until 2018. After obtaining these figures, we then took the ratio of BPO sector revenue to GDP to capture its contribution to the growth of the Philippine economy. We expect the sign of *bpogdp* to be positive because it was observed that the BPO sector has been the main driver of the growth of the office segment of the real estate industry in the country. Therefore, as the revenue increases, the BPO sector will continue to attract more FDI, which would then require more office spaces and residential properties to house more employed workers in the industry, and finally attract more FDI into the real estate market. We acknowledge that the FDI inflows into the BPO sector would have been a better proxy, but this data is not currently available, and it is not possible to disentangle this figure from the inflows into the IT-BPM industry.

Real Estate FDI Hypothesis 10: The growing business process outsourcing (BPO) sector increases the demand for office space and contributes to the growth of the real estate market, which attracts more FDI in real estate.

Notably, this will be the first study that will examine the spillovers of the growing BPO sector and OFW remittances on the FDI inflow of a host country's real estate industry. Therefore, our final model is as follows:

$$PHREFDI = \beta_0 + \beta_1 marketsize + \beta_2 corrupt + \beta_3 infrastructure + \beta_4 otherfdilag + \beta_5 refdilag + \beta_6 propprice + \beta_7 intrate + \beta_8 touristlag + \beta_9 ofw + \beta_{10} bpogdp + \mu$$

Equation 4

8. Analysis of Data and Interpretation of Results

8.1 General Description of Data

Table 1: Summary Statistics

Variable	Obs	Mean	Std.Dev	Min	Max	Skewness	Kurtosis
totalfdi	49	73159.16	122000	-796.211	518000	2.501	8.894
refdi	15	8649.575	3327.661	3881.553	16204.83	.864	3.087
gdp	50	3800000	2200000	1290000	9750000	1.149	3.392
gdpcap	50	50927.44	13484.63	34898.49	90054.63	1.404	4.109
infrate	50	9.415	8.834	.674	50.339	2.556	11.267
laborcost	31	.503	.149	.196	.681	-.627	1.998
openness	50	.785	.279	.396	1.321	-.042	1.635
corptax	25	31.24	1.763	30	35	1.118	2.95
corrupt	25	2.972	.485	2.3	3.8	.221	1.477
telephone	43	2172.409	1509.378	364	4777.9	.038	1.364
pop	50	69.784	21.67	36.84	108.274	.158	1.764
internet	26	18610.99	22671.79	3.4	65098.4	.872	2.14
eleccap	35	6.14e+08	1.68e+08	3.78e+08	9.55e+08	.329	2.102
otherfdi	15	211000	161000	38285.68	508000	.794	2.205
propprice	12	595601	200000	400899	995200	.715	2.305
housepriceindex	30	78.51	32.73	23.7	132.4	.025	1.769
intrate	20	5.296	3.322	.708	11.99	.594	2.449
tourist	12	5060000	1660000	3017099	8260913	.52	2.206
ofw	31	585000	480000	21778.23	1560000	.545	2.129
bpogdp	15	.083	.043	.017	.142	-.121	1.723

Standard deviation measures the variability in the data, and they indicate a large spread in the data point from the mean. There are large deviations for most variables in this dataset: *totalfdi, gdp, gdpcap, telephone, internet, eleccap, otherfdi, tourist, and ofw*.

Skewness measures the degree of asymmetry in the data distribution hence, symmetrical distribution will have a skewness of 0. Five variables, *totalfdi, gdp, gdpcap, infrate, openness*, display a highly skew distribution showing a skewness value greater than 1/-1. Meanwhile, kurtosis measures the peakness or flatness of the distribution and indicates outliers in the observations. *corptax* and *refdi* series are mesokurtic with a value very close to 3, implying the extreme values of the distribution are similar to standard normal distribution. Several variables including *infrate*, *totalfdi gdpcap,* and *gdp* variables have kurtosis value greater than 3, indicating the data are positive leptokurtic, which is a peaked curve with plenty of higher values or outliers. The rest of the variables exhibit a platykurtic distribution with kurtosis less than 3, which is a flatted curve with lower values or a lack of outliers.

Table 2: Matrix of Correlations (Equation 1)

Variables	lntotalfdi	lngdp	lngdpcap	infrate	lnlaborcost	lnopenness	corptax	corrupt	lntelephone
lntotalfdi	1.000								
lngdp	0.839	1.000							
lngdpcap	0.847	0.996	1.000						
infrate	-0.425	-0.570	-0.553	1.000					
lnlaborcost	0.565	0.813	0.761	-0.562	1.000				
lnopenness	0.423	0.350	0.385	-0.123	0.023	1.000			
corptax	-0.525	-0.653	-0.652	0.133	-0.540	-0.109	1.000		
corrupt	0.614	0.438	0.465	-0.259	0.064	0.201	-0.143	1.000	
lntelephone	0.516	0.673	0.620	-0.418	0.870	0.253	├0.355	-0.030	1.000

Table 3: Matrix of Correlations (Equation 2)

Variables	lnrefdi	lngdp	lngdpcap	infrate	lnlaborcost	lnopenness	corptax	corrupt	lntelephone
lnrefdi	1.000								
lngdp	0.566	1.000							
lngdpcap	0.582	0.999	1.000						
infrate	0.038	-0.557	-0.540	1.000					
lnlaborcost	-0.254	0.038	0.006	-0.295	1.000				
lnopenness	0.797	0.654	0.678	-0.090	-0.545	1.000			
corptax	.	.	.	.	.	.	.		
corrupt	0.251	0.826	0.815	-0.614	0.217	0.341	.	1.000	
lntelephone	0.553	0.363	0.384	0.158	-0.510	0.686	.	-0.080	1.000

Note: corptax has a constant value of 30 all throughout the sample period

Table 4: Matrix of Correlations (Equation 3 and Equation 4)

Variables	lnrefdi	lngdpcap	popgrowth	corrupt	lntelephone	lninternet	lneleccap	lnotherfdilag	lnrefdilag	lnpropprice	housepriceindex	intrate	lntouristlag	lnofw	bpogdp
lnrefdi	1.000														
lngdpcap	0.564	1.000													
popgrowth	-0.081	-0.395	1.000												
corrupt	0.167	0.755	0.004	1.000											
lntelephone	0.475	0.370	-0.218	-0.140	1.000										
lninternet	0.448	0.876	-0.201	0.844	-0.049	1.000									
lneleccap	0.613	0.981	-0.368	0.661	0.450	0.851	1.000								
lnotherfdilag	0.554	0.952	-0.411	0.701	0.332	0.797	0.927	1.000							
lnrefdilag	-0.007	0.218	-0.102	-0.012	0.550	0.045	0.259	0.108	1.000						
lnpropprice	0.545	0.994	-0.418	0.736	0.429	0.822	0.968	0.952	0.250	1.000					
housepriceindex	0.526	0.937	-0.261	0.866	0.132	0.952	0.889	0.856	0.167	0.910	1.000				
intrate	0.454	-0.088	-0.201	-0.549	0.668	-0.447	-0.027	0.037	0.194	-0.030	-0.274	1.000			
lntouristlag	0.508	0.986	-0.340	0.800	0.391	0.851	0.953	0.915	0.265	0.989	0.939	-0.128	1.000		
lnofw	0.584	0.990	-0.452	0.689	0.464	0.803	0.972	0.951	0.233	0.997	0.892	0.021	0.978	1.000	
bpogdp	0.515	0.976	-0.435	0.720	0.330	0.838	0.950	0.926	0.210	0.977	0.896	-0.102	0.959	0.973	1.000

In the first correlation matrix for Equation 1, few of the variables are highly correlated to each other, which indicates there may be severe collinearity between our market size variables and *totalfdi, gdp* and *laborcost,* as well as *laborcost* and *telephone,* due to the strong correlation values greater than 0.8. Besides, *infrate* is negatively correlated to all variables except *corptax*.

The second matrix shows somewhat different correlations most likely due to having fewer observations owing to the fact that the sample period of our dependent variable *refdi* starts from 2005 as opposed to Equation 1's dependent variable *totalfdi* that starts in 1971. *Infrate* remains negatively correlated to all variables while *corrupt* is strongly and positively correlated with the market size variables.

The results of the third matrix can be distorted since it only has 10 observations. It can be observed that the correlation coefficients among almost all variables with *gdpcap* are almost all above 0.8 and a large part of them are even greater than 0.9. This usually occurs when there is an important economic relationship between the variables. Therefore, it is expected that a serial correlation may appear in our time series models. For instance, *gdpcap* is strongly correlated with the infrastructure variables (except for *telephone),* both price variables, the lagged variables of *otherfdi and tourist, ofw, and bpogdp.* Both price variables (*propprice and housepriceindex)* are strongly correlated with the two infrastructure variables, *corrupt,* and *otherfdi.* Moreover, *ofw, bpogdp, tourist, and otherfdi* are highly correlated with one another. Albeit weakly correlated, *popgrowth* is negatively correlated with all variables except *corrupt.* High correlation may cause a multicollinearity problem in a multiple regression analysis. To mitigate this and for reasons of parsimony, we will use one proxy that has the same underlying drivers at a time.

8.2 Empirical Results

Table 5: Unit Root Tests

Variable	ADF		PP	
	Level	First Difference	Level	First Difference
infrate	-4.634***	-9.033***	-4.575***	-12.030***
corptax	-1.903	-4.907***	-1.976	-4.912***
corrupt	-1.379	-4.643***	-1.556	-4.672***
	-0.318	-4.619***	-0.315	-4.611***
housepriceindex				
intrate	-2.176	-4.335***	-2.241	-4.342***
bpogdp	-0.814	-2.801**	-0.824	-2.750**
popgrowth	-4.861***	-11.525***	-4.987***	-13.101***
lntotalfdi	-0.923	-8.623***	-0.704	-8.557***
lnrefdi	-2.684*	-6.435***	-2.701*	-7.554***
lngdp	1.167	-3.742***	0.711	-3.743***
lngdpcap	2.005	-3.728***	1.205	-3.728***
lnlaborcost	-5.831***	-3.823***	-5.929***	-3.797***
lnopenness	-0.637	-6.434***	-0.667	-6.434***
lntelephone	-1.028	-3.248**	-0.941	-3.288**
lninternet	-5.042***	-3.842***	-5.223***	-3.839***
lneleccap	0.345	-6.529***	0.507	-6.597***
lnpropprice	3.599	-1.689	2.595	-1.671
lnofw	-3.644***	-4.618***	-5.197***	-4.587***
lnrefdilag	-2.697*	-6.189***	-2.679*	-6.826***
lnotherfdilag	-0.695	-4.891***	-0.575	-4.715***
lntouristlag	0.387	-7.000***	0.786	-6.656***

Table 5 reports the results of both ADF and PP unit root test for levels and the first differences of natural log values and they showed identical results. Interestingly, *infrate, popgrowth, laborcost, internet, and ofw,* are stationary in $I(0)$ at 1% significance level, while *refdi* is stationary at the 10% level. All the other variables, with the exception of *propprice*, became stationary when they are first differenced $x_t \sim I(1)$. P-value of *refdi* also indicated significance at 1% level. Since *propprice* shows a consistent behavior of random walk, in other words, past property prices cannot be used to predict future property prices, we will be using *housepriceindex* as a proxy for market price.

Therefore, to avoid running a spurious regression, we will include the $I(0)$ of the following regressors: *infrate, popgrowth, laborcost, internet, and ofw,* and the first difference $I(1)$ of the rest of the variables.

8.2.1 A Model of FDI in the Philippines

The equation that will be estimated is the following:

$$\log(FDI) = \beta_0 + \beta_1 \log(marketsize) + \beta_2 infrate + \beta_3 \log(laborcost) + \beta_4 \log(openness) + \beta_5 corptax + \beta_6 corrupt + \beta_7 \log(telephone) + \mu$$

Table 6: Regression Results

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
d1lngdpcap	-20.327			-19.474		-17.243		-6.366
	(12.191)			(11.206)		(11.781)		(7.882)
infrate	-0.007	-0.001	0.006	-0.005	0.005	0.001	0.014	0.011
	(0.079)	(0.082)	(0.077)	(0.074)	(0.081)	(0.078)	(0.053)	(0.053)
lnlaborcost	2.017	1.442	1.455	1.898*	1.384	1.889	0.715	0.776
	(1.183)	(1.135)	(1.006)	(1.008)	(1.121)	(1.175)	(0.607)	(0.614)
d1lnopenness	2.167	1.288	0.701	1.997	1.195	2.092	-0.259	0.003
	(2.918)	(3.177)	(2.864)	(2.728)	(3.142)	(2.915)	(2.281)	(2.278)
d1corptax	-0.103	-0.089	-0.089	-0.107				
	(0.104)	(0.108)	(0.102)	(0.097)				
d1corrupt	0.099	0.273			0.272	0.134		
	(0.428)	(0.468)			(0.463)	(0.427)		
d1lntelephone	1.484	1.801	1.926	1.562	1.754	1.462	2.367*	2.198*
	(1.729)	(1.788)	(1.686)	(1.623)	(1.769)	(1.728)	(1.235)	(1.268)
d1lngdp		-14.325	-12.079		-11.655		-4.917	
		(12.903)	(11.679)		(12.360)		(7.983)	
_cons	1.795*	1.527	1.406	1.702**	1.346	1.607*	0.622	0.624
	(0.890)	(1.014)	(0.913)	(0.772)	(0.979)	(0.869)	(0.580)	(0.476)
Obs.	23	23	24	24	23	23	30	30
R-squared	0.278	0.209	0.196	0.274	0.173	0.230	0.190	0.199

Standard errors are in parenthesis
*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Due to the limited number of observations of *corptax* and *corrupt*, they were dropped in models 7 and 8, while each of them is retained in models 3 to 6. It is noticeable that their absence in our estimation did not significantly improve the overall goodness of fit of our models. Model 1 has the highest value of R-squared and it tells us that 27.8% of the sample variation in *totalfdi* can be explained by our regressors, this is, however, a very small number, which implies that the error variance is large relative to the variance of our dependent variable. It is important to remember that a large error variance can be offset by a large sample size in order to get a reasonably precise estimate of the effect of our independent variables (Wooldridge, 2016).

It can be observed that in model 4, *laborcost* is significantly positive, which is not what we expected as *Traditional FDI Hypothesis 3* states that higher wages discourage FDI. However, this may not be the case in the Philippines, which is known to be not competitive in terms of wages in the ASEAN region

but rather possessing a highly literate and service-oriented labor force. In line with Hoang and Bui (2015), who reveals that one of the determinants of ASEAN countries as an attractive investment location is the skilled labor and labor productivity thus, the rise in the wage level may be caused by improved productivity and quality.

Furthermore, the infrastructure variable, *telephone*, is significantly positive in the last two models, which accepts *Traditional FDI Hypothesis 7*. This implies that foreign investors are attracted to host economies with good quality and well-developed infrastructure as it increases productivity in the country. According to Makabenta (2002), infrastructure affects the decision of foreign investors to locate in a particular SEZ within the Philippines.

Although the rest of the variables remained insignificant, it is worth noting that both market size variables are all unexpectedly negative, which is against our *Traditional FDI Hypothesis 1* and economic theory, but in line with several empirical findings of Nurudeen et al. (2011), Mina (2007) and Masuku & Dlamini (2009). This negative relationship between market size and GDP inflows indicates that foreign investors in the Philippines are not attracted to its market size and growth but rather to other factors such as infrastructure as described above. This contradicts the traditional FDI literature that has proven multiple times that as the market size grows, FDI will start to increase. Unfortunately, this is not the case in the Philippines. Magtulis & Park (2017) argued that despite strong GDP over recent years, the Philippines is still lagging behind FDI inflows as opposed to its neighbours.

In addition, *infrate* is negative in three models while *corptax* is also negative in all models as expected. This implies that foreign investors desire a stable economy as well as lower income taxes as they primarily seek to maximize their profits. Meanwhile, the degree of *openness* is positive as we expected from *Traditional FDI Hypothesis 4* because it implies lower trade barriers and the finding is consistent with several studies in ASEAN (Ismail, 2009; Liargovas & Skandalis, 2012).

Lastly, *corruption* is also positive, which contradicts many studies that argued that foreign investors are willing to invest and operate in a host country that has no excessive risk to its capital and human resources. For instance, Jalil et al. (2016) found a positive impact of corruption on FDI inflows in the case of Asia and Africa, and Helmy (2013) found the same effect of corruption on FDI inflows in MENA which indicates that corruption can be used as a means to easily overcome restrictive laws in countries, with poor governance environment mitigates the impact of institutional inefficiency and therefore is beneficial to FDI inflows.

Table 7: Information Criteria Test

Model	AIC	BIC
1	48.39	57.48
2	46.30	55.38
3	47.32	55.57
4	44.86	53.11
5	47.41	55.35
6	45.76	53.71
7	61.18	69.59
8	60.85	69.25

Based on the information criteria tests, model 4 showed the smallest AIC and BIC, which imply that it is the best-fitting model.

Table 8: Validity Test Results

Validity Test	Breusch-Pagan	White's test	Durbin's alternative test	Mean VIF
Model 4	0.515	0.404	0.4714	2.61

We accepted all null hypotheses of Breusch-Pagan and White's test for heteroskedasticity, which implies the error variances of the model are equally distributed and therefore homoscedastic. Moreover, we also accepted the null hypothesis of Durbin's alternative test for autocorrelation, which indicates that the model does not have a serial correlation. Lastly, there is no evidence of severe multicollinearity as the $VIF\ (x_j)$<10.

As mentioned earlier, the test statistics of cointegration tests are sensitive to the choice of trend specification and lag length. 3 of the information criteria tests: AIC, HQIC, and BIC, as well as LR, indicate 3 lags in our equation.

Table 9: Lag selection

Lag	LR	FPE	AIC	HQIC	SBIC
3	231.12*		-16.8839*	-15.2954*	-11.3676*
4		-7.1e-89*			

Meanwhile, the Johansen cointegration test shows that based on the maximum eigenvalue, the null hypothesis is accepted at rank 4, which indicates that there are 4 cointegrating relationships existing in the series. This also tells us that we can correct the disequilibrium in each of the relationships with VECM, and test for long-run and short-run causality among the cointegrated variables.

Table 10: Johansen Tests for Cointegration

Hypothesized No. of CE	Eigenvalue	t-stat	5% critical value
0		167.5935	94.15
1	0.92518	94.999	68.52
2	0.70801	60.5304	47.21
3	0.63303	32.4607	29.68
4	0.56583	9.0997*	15.41

Table 11: Vector Error Correction Models (Sample 1991-2018)

	Model 1 (Unrestricted trend; 3 lags; 4 ranks)				Model 2 (Restricted trend; 3 lags; 4 ranks)				Model 3 (Unrestricted Constant; 3 lags; 4 ranks)				Model 4 (Restricted Constant; 3 lags; 4 ranks)			
	_ce1 lntotalfdi	_ce2 lngdpcap	_ce3 infrate	_ce4 lnlaborcost	_ce1 lntotalfdi	_ce2 lngdpcap	_ce3 infrate	_ce4 lnlaborcost	_ce1 lntotalfdi	_ce2 lngdpcap	_ce3 infrate	_ce4 lnlaborcost	_ce1 lntotalfdi	_ce2 lngdpcap	_ce3 infrate	_ce4 lnlaborcost
lnopenness	-7.62***	-0.24*	28.55*	1.22 ***	-7.65***	-0.24*	30.36*	1.23***	-10.45**	-1.21	21.00**	1.06***	-7.84*	-0.33	29.21***	1.23***
lntelephone	0.96**	0.31***	7.89	-0.57 ***	0.97***	0.31***	7.58	-0.57***	-0.91	-0.37	-0.37	-0.67***	-1.97	-0.74**	-3.63	-0.74***
Trend					-0.12***	-0.04***	-0.45***	-0.01***								
Constant									-10.31	-9.74***	-6.12	5.73***				
LL	300.84				300.24				286.55				291.86			
AIC	-13.69				-13.80				-13.23				-13.47			
HQIC	-12.04				-12.17				-11.68				-11.90			
SBIC	-8.12				-8.32				-8.04				-8.19			

	Model 5 (No trend; 3 lags; 4 ranks)				Model 6 (Unrestricted trend; 2 lags; 4 ranks)				Model 7 (Restricted Trend; 2 lags; 4 ranks)				Model 8 (Unrestricted Constant; 2 lags; 4 ranks)			
	_ce1 lntotalfdi	_ce2 lngdpcap	_ce3 infrate	_ce4 lnlaborcost	_ce1 lntotalfdi	_ce2 lngdpcap	_ce3 infrate	_ce4 lnlaborcost	_ce1 lntotalfdi	_ce2 lngdpcap	_ce3 infrate	_ce4 lnlaborcost	_ce1 lntotalfdi	_ce2 lngdpcap	_ce3 infrate	_ce4 lnlaborcost
lnopenness	-6.71***	2.16***	23.34***	-0.88***	8.85***	-0.60***	36.87***	1.31***	-33.44***	-0.97***	-25.35***	14.49***	-22.72***	-22.72***	-219.39***	-3.99***
lntelephone	-2.12***	-1.53***	1.07***	0.02	2.35***	0.34***	20.12***	-0.64***	10.44***	0.46***	16.32***	-1.69***	7.65***	7.65***	80.12***	1.11***
Trend									-0.08	-0.04***	-0.34***	-0.02***				
Constant																
LL	271.24				234.41				230.76				216.66			
AIC	12.39				-11.03				-10.91				-10.33			
HQIC	-10.90				-9.87				-9.78				-9.29			
SBIC	-7.40				-7.22				-7.20				-6.91			

	Model 9 (Restricted Constant; 2 lags; 4 ranks)				Model 10 (No trend; 2 lags; 4 ranks)			
	_ce1 lntotalfdi	_ce2 lngdpcap	_ce3 infrate	_ce4 lnlaborcost	_ce1 lntotalfdi	_ce2 lngdpcap	_ce3 infrate	_ce4 lnlaborcost
lnopenness	-77.48***	-22.36***	-211.17***	3.96***	-7.77	0.81	-7.61	-.95
lntelephone	24.95***	7.50***	77.46***	1.09***	-.054***	1.08***	2.43***	0.10***
LL	224.05				193.58			
AIC	-10.72				-8.97			
HQIC	-9.64				-7.98			
SBIC	-7.20				-5.73			

The error correction term is statistically significant for the whole series of fitting VECM with several specifications as shown in the tables above. It is evident that *openness* has a long-term equilibrium relationship with the dependent variable *totalfdi,* showing a lower significance level when we restrict the constant. Recall that *openness* is the ratio of trade to GDP. Therefore, this finding can be supported by the economic theory of trade liberalization and globalization that both stated that the changes over time of the ratio of imports and exports to domestic consumption or production can properly be attributed to changes in artificial barriers, which then stimulates the flow of FDI. This is in line with the analysis of Liargovas & Skandalis (2012), that in the long run, trade openness contributes positively to FDI inflows in developing economies, such as the Philippines. In addition, *telephone* seems to also have a long-run equilibrium relationship with *totalfdi* in the following three specifications: the linear trend is imposed, no trends in the dependent variable, or means are nonzero, but they are not significant. The consistency in our estimates provided by the variations in specification increases our confidence in our findings.

Moreover, these two variables, *openness and telephone* also have a cointegrating relationship with *gdpcap, infrate, and laborcost.* This tells us that these variables move with *openness and telephone* in the long run.

Even though the information criterion tests point to the model with restricted trends and 3 lags as the best-fitting one, this model suffers from instability and most likely an over-specification of lag length. As mentioned earlier, the choice of lag length is crucial in fitting a VECM because test statistics are sensitive to it, thus, both under- and over-specification of lag length may have a negative impact on the power for certain parameter combinations especially if selected by means of a standard information criterion. Moreover, Johansen's test appears to underestimate the number of unit roots in the system and as a result, overestimates the cointegration rank (Winker & Maringer, 2004). Therefore, we trimmed the lag length to two and even though the model with unrestricted trend displayed the lowest value of AIC and BIC, performing diagnostic tests showed that is it mis-specified. Subsequently, we also diagnosed other restrictions and found that the VECM with the specification of the restricted trend, wherein y_t includes linear but not quadratic trends, shows the lowest AIC, HQIC, and SBIC values, which indicates the best fit, wherein our *totalfdi* is normalized and our series is stationary, hence ruling out the possibility of a spurious estimation.

$$\Delta lntotalfdi_t = -0.83ect_{t-1} - 0.12\Delta lntotalfdi_{t-1} + 32.24\Delta lngdpcap_{t-1} ***$$
$$- 0.07\Delta infrate_{t-1} ** + 9.82\Delta lnlaborcost_{t-1} *** - 8.92\Delta lnopenness_{t-1} ***$$
$$+0.75\Delta lntelephone_{t-1} - 0.004 - 0.08\text{t}$$

In the long run, for every 1% increase in *infrate, openness,* increases *totalfdi,* whereas 1% increase in *gdpcap* and *laborcost,* will decrease *totalfdi* flows. Furthermore, the error correction term turns out to

be -0.83 which is between the normally expected range [0;-1], indicating that the previous year's disequilibrium is dissipated for within the current year at a convergence speed of 83%.

The cointegrating equations are:

$$lntotalfdi_{t-1} = -33.44lnopenness_{t-1} + 10.44telephone_{t-1} - 90.77$$

$$lngdpcap_{t-1} = -0.97lnopenness_{t-1} + 0.46telephone_{t-1} - 14.00$$

$$lninfrate_{t-1} = -25.35lnopenness_{t-1} + 16.32telephone_{t-1} - 127.85$$

$$lnlaborcost_{t-1} = 4.49lnopenness_{t-1} - 1.69telephone_{t-1} - 14.18$$

This indicates that in the long run, for every 1% increase in *openness, totalfdi* increases by 33.44%, while a 1% increase in *telephone*, reduces *totalfdi* by 10.44%.

Table 12: VECM Diagnostic Tests

Eigenvalue Stability Condition	Lagrange-multiplier test	Jarque-Bera test	Skewness test	Kurtosis test
The VECM specification imposes 2-unit moduli.	Accept null: No autocorrelation at every lag	Accept null: Disturbances are normally distributed	Accept null: Disturbances are normally distributed	Accept null: Disturbances are normally distributed

Lastly, this VECM does not satisfy the stability condition with 2 eigenvalues having a modulus of one. However, we accepted both the null hypotheses that there is no autocorrelation and the disturbances are normally distributed.

8.2.2 Models of Real Estate FDI in the Philippines

In the succeeding models, we will be testing a set of regressors described earlier on their impact on the FDI inflows in the real estate industry of the Philippines. Thus, the dependent variable will be *refdi.* The first model will have the same regressors as our previous model in order to test whether traditional FDI theories can also be used in explaining real estate FDI. Next, we will be analyzing the independent variables tested in earlier studies of real estate FDI and check whether it is applicable in the Philippine setting. Lastly, we will add two variables that haven't been analyzed in-depth, *ofw, and bpogdp,* and confirm whether they have a significant impact on the increasing flow of FDI in real estate that results in the expansion of the industry.

8.2.2.1 Real Estate FDI Model based on Traditional FDI

The equation that will be estimated is the following:

$$\log(reFDI) = \beta_0 + \beta_1 \log(marketsize) + \beta_2 infrate + \beta_3 \log(laborcost) + \beta_4 \log(openness) + \beta_5 corptax + \beta_6 corrupt + \beta_7 \log(telephone) + \mu$$

Table 13: Regression results

	(1)	(2)	(3)	(4)
d1lngdp	-0.334		0.813	
	(10.112)		(9.343)	
infrate	0.081	0.081	0.089	0.085
	(0.067)	(0.063)	(0.062)	(0.059)
lnlaborcost	-1.292	-1.305	-0.221	-0.255
	(3.530)	(3.492)	(2.604)	(2.620)
d1lnopenness	5.783**	5.857**	5.602**	5.817**
	(2.185)	(2.149)	(2.046)	(2.043)
d1corrupt	0.255	0.252		
	(0.531)	(0.516)		
d1lntelephone	-0.376	-0.394	-0.285	-0.339
	(1.352)	(1.340)	(1.273)	(1.270)
d1lngdpcap		-0.848		-0.705
		(9.684)		(9.208)
_cons	-0.918	-0.908	-0.500	-0.432
	(1.599)	(1.578)	(1.276)	(1.183)
Obs.	14	14	14	14
R-squared	0.655	0.655	0.643	0.643

Standard errors are in parenthesis
*** $p<0.01$, ** $p<0.05$, * $p<0.1$

corptax was omitted in the estimations as it has a constant rate throughout the sample period of 2005-2019, which is at 30%. For this reason, we cannot test whether a change in *corptax* has a significant impact on *refdi.*

Our regression analysis shows that *openness* is significant and positive as expected all across the models. This is consistent with our previous estimation although it appears to be more significant with *refdi.* Therefore, *Traditional Hypothesis 4* can also be used to explain the increasing levels of FDI in real estate.

Interestingly, the two significant variables in *totalfdi* estimation, are not significant here and their signs reversed – *laborcost* and *telephone* have a negative impact on *refdi* as opposed to *totalfdi.* These findings suggest that higher *laborcost* discourages a foreign real estate investor from investing in the Philippines, while a quality *infrastructure* does not seem to attract further FDI in the real estate sector.

Consistent with the *totalfdi* estimations, market size variables remained negative while *corruption* remained positive, implying that the growing market size of the Philippines may not be an important factor in stimulating direct investments from foreign investors. In contrast, the *corruption* level and political risk on real estate FDI, shows a positive influence, further confirming that foreign investors in

the Philippines are attracted by the impression of gaining higher returns associated with circumventing regulatory restrictions.

These contradicting findings suggest that some traditional FDI theories are not enough in explaining FDI levels in the real estate industry, much more in a developing economy, such as the Philippines. Therefore, it is necessary to look into other possible determinants to help us answer our research question.

Table 14: Information Criteria Test

Model	AIC	BIC
1	16.86	21.33
2	16.85	21.32
3	15.31	19.15
4	15.32	19.15

Based on the information criteria tests, model 3 displayed the smallest AIC and BIC, which implies that it is the best-fitting model.

Table 15: Validity Test Results

Validity Test	Breusch-Pagan	White's test	Durbin's alternative test	Mean VIF
Model 3	0.891	0.374	0.034	1.66

We accepted the null hypothesis of Breusch Pagan and White's test for heteroskedasticity, which shows that the error variances of both models are equally distributed and homoscedastic. Besides, VIF confirmed that there is no evidence of severe multicollinearity as it is <10.

However, we rejected the null hypothesis of Durbin's alternative test, which then indicates the presence of serial correlation. Therefore, we used the Prais-Winsten method with the option Cochrane-Orcutt to correct the autocorrelation and improve the efficiency of the coefficient estimators.

The fitted model is:

$$d1lnrefdi_t = 2.35d1lngdp_t + 0.12infrate_t * +0.13lnlaborcost_t + 5.03d1lnopenness_t *** -0.11d1lntelephone_t - 0.51$$

In the fitted model, the adjusted R-squared has improved from 0.4201 to 0.5125, and the levels of statistical significance also have increased, *infrate* turns out to be significant at 10% level, and *openness* at 1% level. The market size variables became positive, but still insignificant.

In addition, the transformed DW-statistic is 2.438. Referring to the Durbin-Watson table critical values with 13 observations and 5 explanatory variables: D_L: 0.294 and D_U: 2.150. The null is $H_0: \rho \leq 0$, $H_1: \rho > 0$, meaning that the residuals are not correlated versus positive autocorrelation in the residuals. Consequently, we fail to reject the null and conclude that positive autocorrelation does not exist any longer, as $D = 2.4376 > d_U = 2.150$.

The Johansen cointegration test shows that there are no cointegrating relationships in our model. However, there may be short-run causalities present among the variables and so, we are going to apply VAR method by including the past values of other series to the series' own history. We will also test for Granger Causality in a VAR model to determine the correlation between the current values of one variable and the past values of other variables. It will also enable us to see the direction of causalities.

It is important to find the optimal lag length for the VAR model. According to the 3 information criteria tests: AIC, HQIC, and BIC suggest 3 lags in our equation while FPE suggests 1 lag.

Table 16: Lag Selection

Lag	LR	FPE	AIC	HQIC	SBIC
1		-1.9e-43*			
2					
3			- 372.859*	- 374.364*	- 370.471*

The VAR regressions are run starting the sample at the earliest possible date with three lags, which is 2008. Our VAR model satisfies stability condition as all the eigenvalues lie inside the unit circle, however, testing for autocorrelation of the residuals cannot be done as variables may not be collinear with *refdi* or their lags. This may be caused by the fact that we have a short sample period and as this process involves omitting the lags of the variables, other variables may be left with no values to run. Therefore, a quick solution is by retesting the VAR model with 1 lag and reducing the number of variables from 6 to 4. By doing so, our two VAR models satisfied the stability condition test and accepted the null hypothesis of no autocorrelation at lag order.

Table 17: Granger causality Wald tests

Null Hypothesis: The lagged values of X-values	do not cause	Variation in Y	F-stat	Probability	F-stat	Probability
lngdp		lnrefdi	4.672	0.031	1.709	0.191
lnopenness		lnrefdi	4.909	0.027	3.776	0.052
lntelephone		lnrefdi	2.186	0.139		
lnlaborcost		lnrefdi			0.004	0.948
lnrefdi		lngdp	2.580	0.108	3.780	0.052
lnopenness		lngdp	0.152	0.697	0.972	0.324
lntelephone		lngdp	0.053	0.818		
lnlaborcost		lngdp			1.060	0.303
lnrefdi		lnopenness	9.084	0.003	6.029	0.014
lngdp		lnopenness	9.737	0.002	12.567	0.000
lntelephone		lnopenness	0.121	0.728		
lnlaborcost		lnopenness			2.476	0.116
lnrefdi		lntelephone	0.295	0.587		
lngdp		lntelephone	1.209	0.271		
lnopenness		lntelephone	21.32	0.000		
lnrefdi		lnlaborcost			3.043	0.081
lngdp		lnlaborcost			2.704	0.100
lnopenness		lnlaborcost			2.336	0.126

Based on the two runs of Granger Causality test, both with controlled variables *refdi, gdp, and openness,* we can conclude that there is bidirectional causality between *openness* and *refdi,* while *gdp* causes *openness* and not the other way around. According to OECD (2002), trade and investment are recognized as mutually reinforcing channels for cross-border activities, and this seems to extend to real estate investments. Although the effect of trade openness on economic growth have been studied extensively for many years and contradicts our findings, it was also confirmed by Idris et al. (2016) that there is bidirectional causality between openness, trade, and economic growth.

Moreover, in the first test run, it shows that *gdp* causes *refdi,* which is in line with our expectations, and *openness* causes *telephone*. The World Trade Report (2004) stated that anticompetitive behavior and restrictive regulations increase transport costs, which leads to raising actual trade barriers, ultimately increasing costs of traded goods and market shares. Meanwhile, in the second test run, it shows that *refdi* causes *gdp* and *laborcost* at a 10% significance level. Since these results are not consistent among the runs, it is not clear enough to reach a strong conclusion.

8.2.2.2 Real Estate FDI Model based on Empirical Studies

In this estimation, *refdi* is our dependent variable while our regressors are the following: market size proxies (*popgrowth and gdpcap), corrupt, housepriceindex, intrate,* one-year lagged variables *of otherfdi, refdi, and tourist, and* infrastructure variables (*telephone, eleccap, and internet).* Therefore, the equation of the estimation is:

$$\begin{aligned}\log(reFDI) = {} & \beta_0 + \beta_1 \log(marketsize) + \beta_2 corrupt + \beta_3 \text{housepriceindex} + \beta_4 \text{intrate} \\ & + \beta_5 corptax + \beta_6 \log(otherfdi_{t-1}) \\ & + \beta_7 \log(refdi_{t-1}) + \beta_8 \log(tourist_{t-1}) + \beta_9 \log(infrastructure) \ + \mu\end{aligned}$$

Table 18: Regression results

	(1)	(2)	(3)	(4)	(5)	(6)
popgrowth	182.981		229.388		77.215	
	(232.009)		(235.881)		(64.973)	
d1corrupt	-1.293	-0.355	-1.861	-1.527	-1.620	-1.146
	(2.275)	(1.085)	(2.384)	(1.269)	(0.558)	(0.582)
d1housepricei~x	0.104	0.119	0.101	0.122	0.021	0.000
	(0.121)	(0.104)	(0.115)	(0.081)	(0.027)	(0.031)
d1lnotherfdilag	-0.369	0.796	-0.491	1.371	0.094	0.271
	(1.012)	(1.152)	(0.865)	(1.190)	(0.268)	(0.432)
d1lnrefdilag	-0.576	-0.816	-0.538	-0.878	-0.461	-0.459
	(0.413)	(0.410)	(0.397)	(0.352)	(0.103)	(0.185)
d1intrate	0.228	-0.000	0.320	0.131	0.537*	0.543
	(0.389)	(0.336)	(0.245)	(0.195)	(0.077)	(0.130)
d1lntouristlag	-2.783	-7.098	2.061	7.077	6.570	6.541
	(9.978)	(7.580)	(10.347)	(8.518)	(2.629)	(4.185)
d1lntelephone	2.248	5.414				
	(6.122)	(5.310)				
d1lngdpcap		-40.619		-74.507		-3.169
		(35.624)		(43.116)		(17.721)
d1lneleccap			4.375	16.864		
			(11.662)	(12.040)		
lninternet					-1.488	-1.644
					(0.365)	(0.562)
_cons	-3.070	1.784	-4.297	1.576	14.110	17.254
	(4.346)	(1.512)	(4.893)	(1.227)	(4.422)	(5.445)
Obs.	10	10	10	10	10	10
R-squared	0.871	0.909	0.872	0.937	0.992	0.981

Standard errors are in parenthesis
*** $p<0.01$, ** $p<0.05$, * $p<0.1$

It is very interesting to see that the R-squared values of all the models are close to one, particularly model 5 in which it shows that 99.2% of the sample variation can be explained by our regressors. This indicates that these new independent variables are more appropriate to forecast the development of real estate FDI inflows and these estimates are more precise in explaining their effects on real estate FDI inflows compared with general FDI determinant variables.

However, only *intrate* turned to be significant at a 10% level and with an unexpected sign, positive. This was not expected as *Real Estate FDI Hypothesis 7* specified that high financing costs would diminish the returns to the capital of foreign investors. However, this could also be translated to increases in return of other fixed-income assets such as bonds relative to the return of real estate thus, shifting the demand from real estate into other assets which ultimately leads to lower real estate prices. This would then support our findings of *housepriceindex* being positive albeit insignificant. This expected result implies that real estate investors in the Philippines are attracted to the higher return of their capital in their investments as there is a high likelihood of appreciation of property value over time, attracting more foreign investors to the market. This is supported by Rodríguez & Bustillo (2010), He et al. (2011), and Fereidouni & Masron (2013).

In addition, our findings also show that *otherfdi* is positive in models where *gdpcap* is the proxy used for market size, and *internet* is the indicator for infrastructure. This supports the follow-the-client *Real*

Estate FDI Hypothesis 4 in which foreign real estate investors follow their customers from other industries that directly invested in the Philippines in order to provide them with their real estate services. This is consistent with the studies of Moshirian & Pham (2000), Ramasamy & Yeung (2010), and Farzanegan & Fereidouni (2014).

Moreover, the lagged variable of *refdi* is negative all across the models, which is the opposite of our expectation from *Real Estate FDI Hypothesis 5*. This indicates that real estate investors do not follow their competitors into the Philippine market, which refutes the follow the competitor hypothesis discussed by Ramasamy & Yeung (2010), and Salem & Baum (2016).

The lagged variable of *tourist* is positive in the models in which *eleccap or internet* is used as a proxy for infrastructure. This result confirms our expectations from *Real Estate FDI Hypothesis 8* and it supports the findings of Rodriguez & Bustillo (2010), Fereidouni & Marson (2011), and He et al. (2011). This tells us that as the Philippines becomes a popular tourist destination, more potential investors learn about the country's growing real estate market, which leads to higher levels of real estate FDI in the country.

corrupt, which serves as a proxy for transparency, negatively impacts *refdi* as expected. This indicates that when the cost and risk of property transactions are high, real estate foreign investors are not comfortable in investing in the country. This is consistent with the findings of Falkenbach (2009), and Fereidouni & Masron (2013).

Lastly, *telephone and eleccap* are positive while *internet* turned out negative. Recall that in the previous estimation, it was concluded that the increasing number of *internet* users in the country does not seem to be a good indicator of improving infrastructure, which we expect to attract further *refdi*. This negative relationship is consistent with the empirical results of Pradhan (2008), Ho & Rashid (2011), Abbas & Mosallamy (2016), and Kamara (2013). It is argued that an increase in the level of infrastructure quality will stimulate domestic investment, which in turn, may restrict FDI inflows. Moreover, in developing countries, infrastructure is funded by the public sector hence, foreign investors often do not have investment opportunities. This is also true for the Philippines, wherein foreign investors are not allowed to fully engage in infrastructure and development projects and operation of public utilities (SyCip, 2018). Though they can participate through a Public-Private Partnership (PPP), which is a contractual agreement between the government and a private firm targeted towards financing, designing, implementing, and operating infrastructure facilities and services that were traditionally provided by the public sector (GOVPH, n.d.). However, if the project involves the operation of a public utility, the operator must be at least 60% Filipino owned. This protection ensures to shield the industry and the economy from potential disruptions that may make foreign funds decide to leave the country. Besides, the term infrastructure includes a set of social, economic, and institutional facilities that are crucial for the functioning of economic activities thus, it involves the transportation system, educational system,

financial system, and legal system, among many others. Therefore, it is hinted that our proxy for infrastructure might be insufficient to wholly capture the effect of infrastructure on *refdi,* and more proxies should be included which might lead to the expected positive sign, such as the case for *telephone and eleccap.*

Table 19: Information Criteria Test

Model	AIC	BIC
1	11.98	14.71
2	8.49	11.21
3	11.93	14.65
4	4.76	7.48
5	-15.46	-12.73
6	-6.97	-4.24

Based on the information criteria tests, model 5 showed the smallest AIC and BIC with a negative value, which imply that it is the best-fitting model.

Table 20: Validity Test Results

Validity Test	Breusch-Pagan	White's test	Durbin's alternative test	Mean VIF
Model 5	0.476	0.351	.	7.04

We accepted the null hypothesis of Breusch Pagan and White's test for heteroskedasticity, which shows that the error variances of both models are equally distributed and homoscedastic. Moreover, $VIF\ (x_j)$<10 confirms that there is no evidence of severe multicollinearity.

However, due to very small sample size, the Durbin's alternative test cannot be performed, even when we specify that the p-values be obtained using the F or t distribution, or specify not to use the Davidson and MacKinnon's approach, which treats missing values generated by regressing on the lagged residuals as missing. This is often the case when estimating and testing autocorrelation with small samples. According to DeCarlo & Tyron (1993), the autocorrelation estimator can be considerably biased especially when the sample size is less than 50, therefore creating implications on applied research.

The Johansen cointegration test shows that there are no cointegrating relationships in our model. Like in the previous estimation, we will also create a VAR model to identify any short-run causalities present among the variables. Granger Causality will also be tested to determine the correlation between the current values of one variable and the past values of other variables.

It is important to find the optimal lag length for the VAR model. According to the 3 information criteria tests: AIC, HQIC, and BIC, as well as LR suggest 1 lag in our equation while FPE suggests 0 lag.

Table 21:Lag Selection

Lag	LR	FPE	AIC	HQIC	SBIC
0		3.7e-08*			
1	2627.2*		-365.125*	-369.136*	-365.449*

The VAR regressions run starting the sample at the earliest possible date with three lags, which is 2013. However, the VAR model does not satisfy the stability condition and testing for autocorrelation of the residuals cannot be done as once again, variables may not be collinear with *refdi* or their lags. This may be caused by the fact that we have an even shorter sample period, especially as this process involves omitting the lags of the variables. Therefore, a solution previously done is by retesting the VAR model with a reduced number of variables from 9 to 4. But even so, VAR models generated failed to satisfy the stability condition test and fail to perform the autocorrelation test. Therefore, inhibiting us from further investigating any causalities among the variables.

8.2.2.3 Philippine Real Estate FDI Model

In this last analysis, we will be adding the variables *ofw* and *bpogdp* to the previous model to test whether they have a significant impact on *refdi*. To this date, no one has done such a study of the significance of OFW remittances or the BPO sector on a country's real estate market. Therefore, it is reasonable to test whether the phenomenon presented in the earlier sections have any impact on the level of real estate FDI in the country.

The equation to be estimated is:

$$\log(reFDI) = \beta_0 + \beta_1 \log(marketsize) + \beta_2 corrupt + \beta_3(\text{marketprice}) + \beta_4 \text{intrate} + \beta_5 corptax + \beta_6 \log(otherfdi_{t-1}) + \beta_7 \log(refdi_{t-1}) + \beta_8 \log(tourist_{t-1}) + \beta_9 \log(infrastructure) + \beta_{10} \log(ofw) + \beta_{11} bpogdp + \mu$$

Table 22: Regression Results

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
popgrowth							168.502		187.899*		220.538**	
							(71.327)		(57.455)		(26.002)	
d1corrupt	-1.299	-1.299	-4.039	-4.039	-1.184	-1.184	-1.839	-0.590	-2.026*	-0.498	-2.460**	-0.617
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.677)	(0.786)	(0.631)	(1.085)	(0.285)	(1.480)
d1housepricei~x	0.140	0.140	0.145	0.145	-0.012	-0.012	0.073	0.130	0.056	0.050	0.048*	0.044
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.049)	(0.083)	(0.029)	(0.074)	(0.012)	(0.073)
d1lnotherfdilag	0.706	0.706	1.357	1.357	0.429	0.429	-0.461	0.679	-0.608	0.230	-0.896**	0.243
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.473)	(0.743)	(0.277)	(0.888)	(0.147)	(0.946)
d1lnrefdilag	-0.489	-0.489	-0.071	-0.071	-0.438	-0.438	-0.444	-0.726	-0.397	-0.500	-0.338**	-0.517
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.215)	(0.358)	(0.176)	(0.437)	(0.075)	(0.439)
d1intrate	0.402	0.402	1.197	1.197	0.543	0.543	0.492	-0.014	0.565*	0.172	0.727**	0.172
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.238)	(0.217)	(0.150)	(0.234)	(0.082)	(0.291)
d1lntouristlag	-0.228	-0.228	33.709	33.709	8.415	8.415						
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)						
d1lntelephone	7.934	7.934					0.776	3.849				
	(0.000)	(0.000)					(2.004)	(2.913)				
d1bpogdp							-23.736	18.829	-33.915	-10.326	-43.773**	-14.753
							(28.796)	(42.991)	(19.139)	(48.961)	(8.098)	(62.741)
lnofw	-4.093	-4.093	-9.084	-9.084	0.963	0.963	-1.076	0.086	-1.195	-0.052	-2.764**	-0.165
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.608)	(0.813)	(0.535)	(1.100)	(0.552)	(3.033)
d1lngdpcap								-8.212		-9.378		-8.807
								(25.082)		(34.708)		(44.872)
d1lneleccap			29.671	29.671					-0.610	2.754		
			(0.000)	(0.000)					(4.196)	(10.474)		
lninternet					-2.409	-2.409					0.344*	0.043
					(0.000)	(0.000)					(0.111)	(0.792)
_cons	56.411	56.411	122.223	122.223	11.668	11.668	12.353	-1.527	13.903	1.057	31.754**	2.312
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(7.932)	(11.154)	(6.987)	(14.990)	(6.445)	(35.931)
Obs.	9	9	9	9	9	9	12	12	12	12	12	12
R-squared	1.000	1.000	1.000	1.000	1.000	1.000	0.958	0.850	0.956	0.729	0.992	0.720

Standard errors are in parenthesis
*** *p<0.01*, ** *p<0.05*, * *p<0.1*

Table 23: Regression Results

	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
popgrowth	186.257**		-3.556		36.421		26.869	
	(46.238)		(58.167)		(66.365)		(66.843)	
d1corrupt	-1.988**	-0.562						
	(0.472)	(0.878)						
d1housepricei~x	0.057*	0.045	0.118	0.116	0.042	0.042	0.039	0.041
	(0.023)	(0.059)	(0.081)	(0.075)	(0.057)	(0.061)	(0.061)	(0.062)
d1lnotherfdilag	-0.612*	0.227	0.511	0.395	-0.145	0.010	0.050	0.008
	(0.226)	(0.737)	(0.548)	(0.591)	(0.479)	(0.641)	(0.498)	(0.648)
d1lnrefdilag	-0.393*	-0.517	-0.666	-0.655	-0.381	-0.439	-0.443	-0.480
	(0.142)	(0.359)	(0.351)	(0.319)	(0.356)	(0.357)	(0.372)	(0.366)
d1intrate	0.564**	0.162	0.013	0.026	0.304	0.206	0.218	0.143
	(0.123)	(0.192)	(0.283)	(0.195)	(0.256)	(0.191)	(0.287)	(0.240)
d1bpogdp	-32.763	-12.620	31.573	33.338	2.667	2.595	-0.081	4.762
	(14.299)	(40.011)	(36.047)	(35.503)	(31.138)	(34.380)	(32.019)	(35.554)
lnofw	-1.199*	-0.011	-0.008	-0.072	-0.458	-0.194	0.390	0.558
	(0.438)	(0.905)	(0.821)	(0.726)	(0.978)	(0.907)	(2.099)	(2.118)
d1lngdpcap		-7.233		4.188		-0.289		6.319
		(28.017)		(17.452)		(24.463)		(22.467)
d1lntelephone			3.865	3.789				
			(2.921)	(2.692)				
d1lneleccap					4.946	3.831		
					(7.740)	(8.763)		
lninternet							-0.172	-0.184
							(0.474)	(0.490)
_cons	13.955*	0.540	-0.584	0.086	5.553	2.526	-4.122	-6.162
	(5.727)	(12.342)	(11.227)	(10.118)	(13.132)	(12.571)	(24.953)	(25.219)
Obs.	12	12	12	12	12	12	12	12
R-squared	0.955	0.719	0.804	0.808	0.727	0.700	0.703	0.695

Standard errors are in parenthesis
*** $p<0.01$, ** $p<0.05$, * $p<0.1$

In the first six models, wherein we ran the same estimates as the previous model, *popgrowth* and *bpogdp* were omitted due to collinearity. This tells us that there is dependency among independent variables. The subsequent models were tested with different controlled variables and regressors. For instance, after we dropped the lagged variable of *tourist* in models 7 to 12, our market size variables and *bpogdp,* were not omitted from the model. In addition, it shows that *popgrowth* is significantly positive but with a high coefficient relative to other variables, and *corrupt* is significantly negative. This shows the opposite result compared to our previous estimation. Interestingly, all the other regressors in model 11 are significant but with reverse signs, except *internet.* The results remained the same when we took out infrastructure from the regression, but with lower R-squared value (model 13 and 14). Lastly, dropping the *corrupt* variable in models 15 to 20 also did not show a much different output.

To move forward with our analysis, it is better to focus our attention on the model that shows the best fit using AIC and BIC. Due to collinearity problems, there was no likelihood information in the first six models.

Table 24: Information Criteria Test

Model	AIC	BIC
7	-1.473	3.376
8	13.890	18.739
9	-.732	4.117
10	21.015	25.864
11	-21.687	-16.838
12	21.405	26.254
13	-2.606	1.758
14	19.422	23.787
15	15.084	19.448
16	14.872	19.235
17	19.068	23.432
18	20.216	24.580
19	20.087	24.451
20	20.404	24.769

Model 11 has the smallest AIC and BIC, indicating that it is the best-fitting model. Moreover, it also has the highest R-squared value, telling us that 99.2% of the sample variation can be explained by the regressors: *popgrowth, corrupt, housepriceindex, otherfdi, refdi, intrate, bpogdp, ofw, and internet.*

Even though our new variables, *ofw and bpogdp* are both statistically significant at 5% level, they are showing a negative sign, which rejects our *Real Estate FDI Hypothesis 9 and 10*. However, this may be telling us that foreign investors do not consider these factors when deciding to invest in the Philippines' real estate market. Perhaps, other significant variables could explain their real estate investment. For instance, market size, *gdpcap and popgrowth,* finally shows a positive sign and significance at 5% level, accepting both our *Real Estate Hypothesis 1a and 1b.* This confirms that foreign real estate investors are attracted to the growing population in the country, which is a good

indicator of future demand for properties, especially residential. This also supports the findings of Rodriguez & Bustillo (2010), He et al. (2011), and Farzanegan & Fereidouni (2014).

Consistent with the previous estimation, *corrupt* is negative while *housepriceindex* is positive, but both are now significant at 5% level therefore accepting both *Real Estate FDI Hypothesis 2 and 6*. This further supports the findings of many studies (Rodriguez & Bustillo, 2010; Fereidouni & Masron, 2013; He, Wang, & Cheng, 2011; Farzanegan & Fereidouni, 2014) that returns to capital are particularly important since foreign investors face business risks and external uncertainties and that foreigners do not engage in *refdi* when the cost and risk of property transactions are high.

Meanwhile, the lagged variables of *otherfdi* and *refdi* are significantly negative, rejecting both the *Real Estate FDI Hypothesis 4 and 5*, and contradicts the findings of Ramasamy & Yeung (2010), and Salem & Baum (2016).

Lastly, *internet* is positively significant at 10% level and accepts *Real Estate Hypothesis 8*, which indicates that long-term real estate investors do consider reliable infrastructure as one of their major criteria when assessing any potential real estate transaction in the Philippines. This is in line with the findings of Fereidouni & Masron (2013) and Anop (2010).

Table 25: Validity Test Results

Validity Test	Breusch-Pagan	White's test	Durbin's alternative test	Mean VIF
Model 11	0.178	0.364	0.674	7.87

We accepted all null hypotheses of Breusch-Pagan and White's test for heteroskedasticity, which implies the error variances of the model is equally distributed and therefore homoscedastic. Moreover, we also accepted the null hypothesis of Durbin's alternative test, which indicates that the model does not have serial correlation. Lastly, as $VIF\ (x_j)$<10, there is no evidence of severe multicollinearity.

The Johansen cointegration test shows that there are no cointegrating relationships in our model. Moreover, when VAR technique is applied to trace the dynamic interactions among our variables, the output shows that VAR model does not satisfy stability condition and the probability that variables may not be collinear with *refdi* or their lags, just as seen from the previous model. Therefore, we are not able to investigate further.

8.2.2.4 Philippine Real Estate FDI Model (Quarterly Intervals)

The results from diagnostic tests magnify the issue of having a small sample size that in return, decreases power and increases estimation error. This inhibits us from making better inferences about the growing *refdi* in the Philippines. It is therefore recommended to work with a larger sample size, to increase the accuracy and precision of our estimates, which would provide a closer approximation of the phenomenon in the real estate industry. According to the recommendations of Jenkins & Quintana-Ascencio (2020) based on their analyses of information theory, a low sample size contributes to problems of reproducibility and so, a greater number of observations is likely needed for regression models. However, they also showed that having a minimum of 8 observations for a very low variance data, and a minimum of 25 observations with high variance, are sufficient to correctly match a model to a data shape. The importance of variance is highlighted because a larger variance means a less precise estimator as there is more noise in the equation making it more difficult to estimate the partial effect of any of the independent variables on *refdi*, and this translates into larger confidence intervals and less accurate hypotheses tests (Wooldridge, 2016).

Table 26: Variance Table

lnrefdi	0.141
popgrowth	0.000
corrupt	0.235
housepriceindex	1071.22
lnotherfdilag	0.646
lnrefdilag	0.135
intrate	11.038
bpogdp	0.002
lnofw	1.568
lninternet	7.231

The variance of *housepriceindex, intrate, and internet* are particularly high therefore requiring us to have at least 25 observations. Therefore, an additional estimation of the quarterly data is conducted to maximize the observations, avoid the data aggregation bias we might get from our annual data, and further examine if there are any differences in coefficients between the two models ran at two different intervals, annual and quarterly.

As a result, we were able to increase the number of observations from 15 to 60. However, infrastructure variables: *telephone, eleccap, and internet* are not included due to the absence of higher-frequency data and so, there is a risk of omitting relevant long-term trends from our model. Moreover, since only the annual data for the BPO total revenue component of the variable *bpogdp* is available and we would like to examine its impact on *refdi* in this particular model, we applied the Denton method to obtain the quarterly figures of *bpogdp*. After testing various variables, we chose the quarterly values of *ofw* to use as a benchmark because it is the one that showed the highest correlation with BPO revenues at 53.50%. In addition, the variables that exhibited seasonality are *refdi, gdpcap, and tourist* hence, these were seasonally adjusted.

Table 27: Summary statistics

	N	Mean	St.Dev	min	max	kurtosis	skewness
qtr	60	209.5	17.464	180	239	1.799	0
exrate	60	47.334	4.084	40.705	56.038	2.01	.323
refdi sa	60	1883.393	1196.262	-2984.27	4732.873	6.55	-.466
otherfdi	60	53095.39	45437.18	-10400	188000	3.591	1.027
pop	60	96.561	7.131	84.619	108.695	1.764	.039
gdpcap sa	60	17028.14	2958.444	13008.48	22959.06	1.955	.457
corrupt	60	3.027	.549	2.3	3.8	1.2	-.076
tourist sa	60	1150000	433000	594000	2170000	2.37	.66
propprice	47	147000	47740.22	96575	267050	2.651	.823
housepriceindex	45	148.933	47.293	98.4	251.3	2.277	.725
intrate	60	3.899	2.247	.383	8.991	2.302	.504
ofw	60	252000	78800.01	135000	407000	2.003	.471
bpogdp	60	.079	.039	.015	.141	1.745	-.111

By using quarterly data, the sample is extended to 60 observations, but the same variables have a large deviation from the mean, and only *refdi* is highly positively skewed. In addition, *refdi* and *otherfdi* have higher kurtosis values indicating the existence of outliers in their observations.

Table 28: Matrix of Correlations

Variables	lnrefdi_sa	lngdpcap_sa	popgrowth	lnpropprice	housepriceindex	corrupt	intrate	lnotherfdilag	lnrefdi_salag	lntourist_salag	lnofw	bpogdp
lnrefdi_sa	1.000											
lngdpcap_sa	0.517	1.000										
popgrowth	0.128	-0.021	1.000									
lnpropprice	0.492	0.989	-0.096	1.000								
housepriceindex	0.529	0.965	-0.118	0.983	1.000							
corrupt	0.217	0.731	0.087	0.688	0.603	1.000						
intrate	0.238	0.053	-0.323	0.138	0.250	-0.453	1.000					
lnotherfdilag	0.371	0.806	-0.187	0.803	0.790	0.572	0.145	1.000				
lnrefdi_salag	0.107	0.542	-0.001	0.561	0.591	0.432	0.094	0.376	1.000			
lntourist_salag	0.479	0.985	-0.063	0.984	0.962	0.768	0.027	0.789	0.560	1.000		
lnofw	0.499	0.981	-0.094	0.979	0.959	0.677	0.100	0.777	0.545	0.971	1.000	
bpogdp	0.466	0.970	0.043	0.943	0.908	0.714	-0.057	0.749	0.512	0.947	0.959	1.000

The correlation matrix above shows that *propprice* and *housepriceindex* are both strongly and positively correlated with the lagged variable of *tourist* and *gdpcap*. Meanwhile, the lagged variable of *tourist* is also highly correlated with *gdpcap* and *ofw*. Consistent with the annual series, *popgrowth* is weakly but negatively correlated to all variables except *corrupt.* Moreover, *bpogdp* also shows high correlation with *gdpcap, propprice, housepriceindex, ofw,* and the lagged variable of *tourist.*

Table 29: Unit Root Tests

Variable	ADF		PP	
	Level	First Difference	Level	First Difference
corrupt	-1.025	-7.591***	-1.022	-7.591***
housepriceindex	2.398	-5.468***	3.040	-5.420***
intrate	-2.349	-6.247***	-2.349	-6.182***
bpogdp	-0.526	-10.294***	-0.417	-10.738***
popgrowth	-2.778*	-7.179***	-3.017**	-7.179***
lnrefdi_sa	-4.587***	-8.787***	-4.577***	-10.067***
lngdpcap_sa	1.503	-7.460***	1.769	-7.467***
lnpropprice	5.251	-3.036**	3.990	-3.296***
lnofw	-0.945	-12.421***	-0.773	-15.113***
lnrefdi_salag	-4.689***	-8.276***	-4.670***	-9.307***
lnotherfdilag	-3.388**	-12.398***	-3.439**	-14.033***
lntourist_salag	0.036	-6.855***	0.033	-6.842***

The table above reports the results of both ADF and PP unit root test for levels and the first differences of natural log values and they showed identical results. The variables *refdi and* its lagged variable are stationary at 1% significance level, lagged variable of *otherfdi* is stationary at 5% level, and *popgrowth* is stationary at 10% level. All the other variables became stationary when they are first differenced $x_t \sim I(1)$. Interestingly, the annual series of *propprice* remained nonstationary even after differencing as opposed to its quarterly series that became stationary after first differencing method.

Therefore, to avoid running a spurious regression, we will include the $I(0)$ of the following regressors: *refdi, popgrowth, refdi_lag, and otherfdi,* and the first difference $I(1)$ of the rest of the variables.

Table 30: Regression Results

	(1)	(2)	(3)	(4)
popgrowth	28.629		22.686	
	(24.303)		(24.823)	
d1corrupt	0.238	0.274	0.032	0.022
	(0.631)	(0.645)	(0.612)	(0.620)
lnotherfdilag	0.276**	0.245**	0.189*	0.152
	(0.104)	(0.104)	(0.105)	(0.099)
lnrefdi_salag	-0.011	0.020	-0.103	-0.120
	(0.179)	(0.182)	(0.160)	(0.166)
d1intrate	-0.147	-0.135	-0.105	-0.092
	(0.143)	(0.153)	(0.135)	(0.144)
d1lntourist_s~g	0.349	1.424	-0.037	0.710
	(3.340)	(3.518)	(2.910)	(2.976)
d1bpogdp	-12.946	-14.142	-11.126	-10.049
	(25.699)	(26.263)	(24.729)	(25.018)
d1lnofw	1.882	1.808	1.670	1.565
	(2.586)	(2.665)	(2.260)	(2.288)
d1housepricei~x	-0.004	-0.002		
	(0.017)	(0.017)		
d1lngdpcap_sa		1.643		1.401
		(12.406)		(11.538)
d1lnpropprice			6.260	8.750
			(6.850)	(6.378)
_cons	4.218**	4.734***	5.787***	6.595***
	(1.563)	(1.541)	(1.694)	(1.493)
Obs.	40	40	42	42
R-squared	0.238	0.203	0.232	0.212

Standard errors are in parenthesis
*** $p<0.01$, ** $p<0.05$, * $p<0.1$

The multiple regression analysis shows that only the lagged variable of *otherfdi* turned out to be significant at 5% level in the first two models and significant at 10% level in the third model. It is however consistently positive and in line with the output of the first estimation on *refdi*. This accepts our *Real Estate FDI Hypothesis 4* and strongly proves that foreign companies from other industries are obligated to invest in properties out of necessity rather than a higher rate of return therefore increasing the demand of real estate and ultimately, attract real estate FDI into the Philippines. This supports the findings of He et al. (2011) that the concentration of foreign enterprises may generate demand for office buildings, industrial, and commercial real estate properties. This is also consistent with the findings of Ramasamy & Yeung (2010) and Moshirian & Pham (2000).

The rest of the variables are statistically insignificant. Both market size variables are positive thus indicating a consistently increasing *gdpcap* and *popgrowth* generates demand for real estate properties which then attracts more FDI due to the prospect of higher revenues. This is consistent with the previous estimation wherein they also turned out to be significant.

More importantly, despite consistently showing a positive sign in the previous two estimations, *intrate* is now showing the expected negative, which supports the findings of Adams & Fuss (2010), Ramasamy

& Yeung (2010), Fereidouni & Masron (2013), Gholipour et al. (2014). They all suggested that foreign investors in real estate rely on the host country's financial systems to raise the capital that is required for their investment especially when its development is a highly capital-intensive business.

Moreover, it is very interesting to see that when *propprice* is used as the proxy for market price, it shows a positive sign. This is consistent with the two previous estimations that showed a positive sign, and so, the statement that the return to capital is a major determinant of *refdi* is robust. However, when we use *housepriceindex* as the proxy for market price, the signs change to negative.

In addition, *corrupt* showed a negative sign in the earlier estimations but now it is positive, which implies that a lack of transparency acts as a stimulus for foreign investments because this factor can be beneficial in circumventing regulatory and administrative restrictions, ultimately increasing the returns of that investment.

At the same time, the lagged variables of *refdi* were negative in most of the models, which is consistent with our previous two estimates with annual series. Although this result is the opposite of our expectation, we can say that this finding is robust: the follow-the-competitor hypothesis is not applicable in *refdi* of the Philippines.

tourist is positive, similar to the first estimation in which we suggested that it is likely that the increasing number of visitors in the country also makes its real estate market very attractive, as more people learn about it and the country as a *refdi* destination. This finding is robust and further supports Rodriguez & Bustillo (2010), Fereidouni & Marson (2011), and He et al. (2011).

Although we once again failed to reject both *Real Estate FDI Hypothesis 9 and 10,* it is important to point out that *ofw* consistently stayed positive all across the models while *bpogdp* remained negative, which is not expected because as this sector continues to grow, so is its demand for office spaces. This is consistent with the previous estimate wherein it was significantly negative. This result is strongly denoting that that real estate foreign investors do not consider this as a major determinant of their *refdi* in the Philippines and that other factors appear to be attracting them into the country's industry. On the other hand, as more Filipinos seek employment overseas to earn higher wages to support their families back home, their regular remittances in foreign currency do not only stimulate consumption by their families in the Philippines, but it also allows them to have enough money to invest in properties such as residential houses and condominiums in urban areas (BSP, 2019 D). As a result, it increases the demand for real estate which in turn attracts more FDI in this industry. However, this was not the case in the previous estimate where it showed a negatively significant impact on *refdi.*

Table 31: Information Criteria Test

Model	AIC	BIC
1	65.87	82.76
2	67.65	84.54
3	65.77	83.15
4	66.83	84.21

Table 32: Validity Test Results

Validity Test	Breusch-Pagan	White's test	Durbin's alternative test	Mean VIF
Model 3	0.310	0.427	0.002	1.91

We accepted the null hypothesis of Breusch Pagan and White's test for heteroskedasticity, which shows that the error variances of both models are equally distributed and homoscedastic. VIF also confirmed that there is no evidence of severe multicollinearity as it is <10.

However, we rejected the null hypothesis of Durbin's alternative test, which indicates the presence of serial correlation. Therefore, we used the Prais-Winsten method to correct the autocorrelation and improve the efficiency of the coefficient estimators.

The fitted model is:

$$lnrefdi_t = 33.86popgrowth_t - 0.03d1corrupt_t + 0.10lnotherfdilag_t - 0.11lnrefdilag_t - 0.13d1intrate_t - 1.05d1lntouristlag_t + 7.09d1bpogdp_t - 0.53d1lnofw_t + 5.52d1lnpropprice_t - 6.65$$

In the fitted model, the adjusted R-squared has significantly improved from 0.0159 to 0.8648. However, none of the variables turned out to be statistically significant. Moreover, the transformed DW-statistic is 2.438. Referring to the Durbin-Watson table critical values with 42 observations and 9 explanatory variables: D_L: 0.987 and D_U: 1.834. We then accepted the null and conclude that positive autocorrelation does not exist any longer, as $D = 2.438 > d_U = 1.834$.

Table 33: Annual Estimates vs Quarterly Estimates

Variables	Annual Model 11	Quarterly Model 3
popgrowth	220.538**	22.686
d1corrupt	-2.460**	0.032
lnotherfdilag	-0.896**	0.189*
lnrefdi_salag	-0.338**	-0.103
d1intrate	0.727**	-0.105
d1lntourist_salag		-0.037
d1bpogdp	-43.773**	-11.126
d1lnofw	-2.764**	1.670
d1lnpropprice		6.260
d1housepricei~x	0.048*	
lninternet	0.344*	
F-stat	0.0343	0.408
R-Squared	0.992	0.2319
Adj. R-Squared	0.9575	0.0159
AIC	-21.687	65.770
BIC	-16.838	83.146

Comparing the R-squared values as well as AIC and BIC of the selected models, it appears that our estimates with annual intervals have a better fit than the one in quarterly intervals. More importantly, the overall f-statistics of annual estimates are significant at a 5% level, while quarterly is not.

This suggests that annual data showing long-term movements are more reliable than quarterly data when choosing to decide to invest in real estate in the Philippines. The reason is most likely because real estate investments are considered long-term investments and therefore, they are not vulnerable to short-term fluctuations. However, the underlying information derived from the quarterly data can be used to supplement the insights obtained from annual data.

To further our quarterly interval analysis, the Johansen cointegration test and the VECM method cannot be conducted as our sample has 4 gaps due to the negative values found in *refdi* and *otherfdi*. Moreover, when the VAR technique is applied to trace the short-run relationships among our variables, the output shows that it does not satisfy stability conditions and it failed to reject the null hypothesis of no autocorrelation at the second lag. Meanwhile, the Granger Causality Wald test shows the following null hypotheses that can be rejected:

Table 34: Granger Causality Wald Tests

Null Hypothesis: The lagged values of X-values	do not cause	Variation in Y	F-stat	Probability
lnrefdilag		lnrefdi	3.8518	0.050
lnrefdilag		lnpopgrowth	6.3911	0.011
bpogdp		lnpopgrowth	3.7474	0.053
popgrowth		lncorrupt	6.4502	0.011
lnintrate		lncorrupt	10.361	0.001
lntouristlag		lncorrupt	10.697	0.001
lnpropprice		lncorrupt	3.3828	0.066
lnrefdi		lnrefdilag	5.5027	0.019
intrate		lnrefdilag	4.8107	0.028
lntouristlag		lnrefdilag	7.96	0.005
lnpropprice		lnrefdilag	4.6984	0.030
corrupt		intrate	5.5458	0.019
lnotherfdilag		intrate	6.3367	0.012
bpogdp		intrate	4.3089	0.038
lnrefdi		lntouristlag	3.2071	0.073
popgrowth		lntouristlag	6.2706	0.012
lnpopprice		lntouristlag	6.5568	0.010
corrupt		lnofw	2.891	0.089
intrate		lnofw	7.648	0.006
lnrefdi		propprice	8.4925	0.004
lnotherfdilag		propprice	3.1567	0.076
lntouristlag		propprice	5.6831	0.017

The dependent variable *refdi* seems to cause *propprice* and in turn, the changes in property prices influence its lagged variable. This finding confirms our hypothesis that foreign real estate investors are attracted to increasing property prices in the Philippines and therefore support the studies done by Bagchi-Sen (1995), Rodríguez & Bustillo (2010), Fereidouni & Masron (2013), Farzanegan & Fereidouni (2014), and He et al. (2011). Therefore, as property prices increase, more foreign investments will flow into the market, which would cause an appreciation of property value and ultimately, meet the expectations of foreign investors.

Moreover, *intrate* causes the lagged variable of *refdi,* which tells us that foreign investors take into account interest rates as it affects their ability to finance their real estate investments, which usually requires higher capital than other types of long-term investment. This is in line with the study of Adams & Füss (2010) that observed a shift of demand from real estate into other assets after an increase in the long-term interest rate. Meanwhile, the lagged variable of *tourist* also causes *refdi,* indicating that tourism agglomeration leads to higher levels of *refdi* in the Philippines, further supporting the findings of Rodríguez & Bustillo (2010) and Fereidouni & Masron (2011).

Table 35: Summary of Best-Fitting Models

Variables	Traditional FDI Model (4)	Real Estate Model based on Traditional FDI (3)	Real Estate Model based on Empirical Studies (5)	Extended Real Estate Model Annual (11)	Extended Real Estate Model Quarterly (3)
d1lngdpcap	-19.474				
d1lngdp		2.346			
infrate	-0.005	0.117*			
lnlaborcost	1.898*	0.132			
d1lnopenness	1.997	5.032***			
d1corptax	-0.107				
d1lntelephone	1.562	-0.109			
popgrowth			77.215	220.538**	22.686
d1corrupt			-1.620	-2.460**	0.032
lnotherfdilag			0.094	-0.896**	0.189*
lnrefdi_salag			-0.461	-0.338**	-0.103
d1intrate			0.537*	0.727**	-0.105
d1lntourist_salag			6.570		-0.037
d1bpogdp				-43.773**	-11.126
d1lnofw				-2.764**	1.670
d1lnpropprice					6.260
d1housepricei~x			0.021	0.048*	
lninternet			-1.488	0.344*	
F-stat	0.418	0.066	0.200	0.034	0.408
R-Squared	0.274	0.716	0.992	0.992	0.232
Adj. R-Squared	0.018	0.513	0.925	0.958	0.0159
AIC	44.864	7.706	-15.457	-21.687	65.770
BIC	53.111	11.095	-12.734	-16.838	83.146
Model No.	1	2	3	4	5

Only two models out of the five presented above show a significant overall fit. These models are: (1) Real Estate Model based on Traditional FDI, which is statistically significant at 10% level, and (2) the Extended Real Estate Model with Annual intervals, which is significant at 5% level. Rejecting the null hypothesis of their respective f-statistics indicates that one of their independent variables can explain real estate FDI inflows in the Philippines. Through this analysis, we can conclude that traditional FDI determinants that are mainly based on manufacturing FDI, can still be used in explaining real estate FDI. More importantly, our findings uphold our claim that the existing literature on the determinants of real estate FDI is insufficient in capturing its growth in the Philippines thereby calling for a country-specific analysis that can incorporate variables that have not been examined in the past. As seen from Extended Real Estate Model, its overall fit is statistically significant at 5% level, while its high adjusted R-Squared value states that 95.8% of its sample variation in real estate FDI can be explained by its independent variables; and this model displayed the lowest value of AIC and BIC indicating the best-fit.

In the following section, we will be referring to the *Traditional FDI Model as* ***model 1***; *Real Estate Model based on Traditional FDI as* ***model 2***; *Real Estate Model based on Empirical Studies as* ***model 3***; *Extended Real Estate Model (Annual) as* ***model 4****;* and its *Quarterly model as* ***model 5***.

9. Discussion

In this section, we will further discuss each of the findings from the empirical results presented in our Best-Fitting Models 1 to 5 as shown in the table above, together with the outcomes from our estimation of VECM, VAR models, and Granger Causality tests. Moreover, we will present the convergence of our results with the findings of previous empirical studies reviewed in Section 5 and also argue in the light of related theories described earlier.

Model 1 failed to confirm *Traditional FDI Hypothesis 1* concerning larger market attracts a higher level of total FDI net flows, due to insignificant market size parameter *gdpcap*. Despite the unexpected result of market size, it is evident in most FDI studies in developing countries including the Philippines that the size of the domestic market has a statistically positive effect in attracting FDI (Jadhav, 2012; Bénassy-Quéré, Coupet, & Mayer, 2007; Fedderke & Romm, 2006; Mottaleb & Kalirajan, 2010; Asiedu, 2002; Boudier-Bensebaa, 2005; Erdal & Tatoglu, 2002; Arango, 2008; Ismail & Yussof, 2003). However, we have identified a significant cointegrating relationship between these two variables after estimating VECM. Whereas model 4 also showed a positive and significant relationship of population growth on real estate FDI hence, *Real Estate FDI Hypothesis 1b* on market size was accepted. This is consistent with several empirical studies (Farzanegan & Fereidouni, 2014; He, Wang, & Cheng, 2011; Rodríguez & Bustillo, 2010; Salem & Baum, 2016; Fereidouni & Masron, 2011) that proposed economic development and domestic market size guarantee demand for properties and capture potential economies of large-scale production such as in real estate sector. Therefore, we believe that the overall positive and stable economic landscape is one of the fundamentals and provides the precondition for future market insight while boosting investor confidence, both domestically and internationally.

In addition, model 1 showed a negative effect of corporate tax rate on the flows of general FDI in accordance with our *Traditional FDI hypothesis 5*, although it was insignificant. Despite the lack of significance of the finding, the negative impact is confirmed by several studies (Wei, 2000; Fedderke & Romm, 2006; Gastanaga, Nugent, & Pashamova, 1998; Ali, Fiess, & MacDonald, 2010), which suggest a reduction of corporate tax rates will increase competitiveness. Therefore, the Philippines' high corporate tax rate puts itself in the position as one of the least competitive nations in the Southeast Asia region. Even though the government has proposed a new tax reform with the aim of streamlining the tax system and lowered the corporate income tax rate, the ranking remains unchanged. Meanwhile, the government is repealing tax incentives, while its regional peers are offering more tax incentives to encourage FDI (BMI, 2018). Hence, in the case of the Philippines, the corporate income tax may not be a decisive factor for foreign MNEs to invest in the country. This reinforces our confirmation that foreign firms are driven by its market and efficiency motives. Therefore, the drawbacks of high corporate tax can be compensated by an increase in the profit and a decline in costs.

Furthermore, model 1 revealed that an increase in labor cost will lead to a significant increase in total net inflows of FDI. This was unexpected but in line with the study conducted by Boudier-Bensebaa (2005). A possible rationale behind this is that foreign MNEs may be rather attracted to the quality of labor and therefore willing to pay higher wages. Therefore, even though wages increase, this level may still be lower compared to their home countries like the US. Indeed, the skilled and large labor force is one of the acknowledged locational advantages that foreign MNEs desire to capitalize on by exploiting their firm-specific advantages motivated by seeking efficiency. As an example, Google decided to open its first operations in the Philippines to provide services for its customers, ensure quality assurance, and sales activities, particularly owing to the perception of ease in attracting and employing qualified and skilled technical employees in the country (BusinessWorld, 2018). Our findings suggest that the continuous investment in human capital is crucial for the Philippines in order to maintain its locational advantage and remain labor competitive in the region, which is also highlighted and proven by Noorbakhsh et al. (2001) and more importantly to attract higher amount FDI into the high value-added sectors. Fortunately, the current administration also has realized the significance of developing human resource and this manifested in one of its goals in attaining a high level of human development by 2022 through the implementation of several specific initiatives (NEDA, 2017, pp. 147-158). However, the increased labor cost is undesirable in the long run according to our VEC model, as foreign firms may be attracted to other countries that offer the same skills for a lower wage. This is supported by Ho & Rashid (2011) who argue that inexpensive labor force is influential in stimulating FDI inflows in the country.

The inflation rate has been experiencing considerable fluctuations in the last 20 years, reaching its peak in 2018 at 8.26% and its lowest in 2015 at 0.67%. Our empirical findings indicated a negative effect of inflation on general FDI whereas it had a positive effect on real estate FDI as shown in models 1 and 2 respectively, although both coefficients are insignificant. This negative relationship between increasing inflation and general FDI can be explained by the fact that as inflation rises, it also increases input costs and operational costs for foreign firms. These costs include raw materials, oil prices, wages, renting costs, among many others. As a consequence, profitability may decline, if demand for the products and/or services are price elastic owing to an increase in the input costs and thereby sale price. In other words, inflation spikes may cause a drop in their revenue. The significance of inflation is further confirmed by several scholars, which all agreed on the effectivity of low inflation in attracting foreign investments, as it is perceived as an indicator of the host country's economic stability (Baniak, Cukrowski , & Herczyński, 2005; Demirhan & Masca, 2008; Onyeiwu & Shrestha, 2004; Jadhav, 2012; Hayakawa, Kimura, & Lee, 2013). Therefore, large fluctuations in inflation would increase the risk and uncertainty which are then undesirable as it subsequently increases the cost of capital, ultimately affecting profitability.

In contrast, our empirical results indicated that higher inflation encourages real estate foreign investors to enter the Philippine market, although insignificant. According to Shivee et al. (2015) and Kolstad & Villager (2008) inflation was found to be negative and insignificant for services FDI in ASEAN countries. They concluded that ASEAN countries might be able to attract services FDI by focusing on significant determinants like market size, human capital, infrastructure, and trade liberalization.

The house price index within the examined period 2005-2019 has shown a clear rising trend. Both models 3 and 4 indicated a positive relationship between property price and real estate FDI, while the latter provided statistical evidence, which accepted our *Real Estate FDI Hypothesis 6*, concerning higher housing prices guarantee high future returns and capital growth therefore attracting more real estate FDI. Several researchers have proposed that there is a positive association between property prices and real estate FDI inflows, because property prices determine the returns to capital in real estate investment, therefore attracting more FDI in the host country's real estate industry (Fereidouni & Masron, 2013; Farzanegan & Fereidouni, 2014; He, Wang, & Cheng, 2011). Additionally, there is bidirectional causality between real estate FDI and property prices according to Granger Causality test. This is in line with various studies that have provided empirical evidence confirming the significant relationship between FDI and house prices in emerging countries (Poon, 2017; He, Wang, & Cheng, 2011; Farzanegan & Fereidouni, 2014). Although FDI only played a minor role in house price appreciations, fluctuation in the property market was the main source of price movement in emerging economies. In turn, higher property prices attract more foreign investors to the Philippine property market in order to take advantage of the market profitability.

Models 3 and 4 both showed a positive and significant effect of real interest rate on real estate FDI, and this finding is further supported by the results from Granger Causality test which propose that interest rates can be a useful predictor of real estate FDI. This result is inconsistent with previous empirical studies. For instance, He et al. (2011) and Mak et al (2012) found evidence that low financing costs could be a significant locational advantage because foreign investors prefer cities with easy access to capital, especially when real estate investment is highly capital-intensive. Therefore, they proposed that lower financing costs would significantly affect the return on these real estate investments. During the last years, low interest rates have been one of the drivers of the supply of real estate construction activities by which Philippine and foreign real estate firms gain from the low financing costs through cheap loans or bonds offered by the local banks (PWC, 2019).

Nonetheless, Model 2 indicated positive relationship between labor cost and real estate FDI, but insignificant. Inconsistently with previous studies, according to He et al. (2011), foreign investors tend to avoid Chinese provinces with higher land costs and real labor costs, as real estate business was highly labor-intensive hence, lower labor costs would improve return and attract more foreign developers in this sector. Currently, the labor cost has been rising due to shortage of skilled workers, as the

government has announced a shortage of 800,000 to one million skilled workers in construction, architecture, and engineering, which may last up to the year 2022, due to the surge of public infrastructure projects and real estate building activities (DOLE, 2019). The mismatch of construction labor may cause an increase in costs due to being unskilled and ineffective workers, which may also lead to higher waste of materials and delays of building projects, ultimately constricting growth in the sector (Lamudi, 2020 C; Ibañez, 2020). More so, it may act as a deterrent for foreign real estate investors in entering the Philippine market because there is uncertainty in employing sufficient skilled workers, which will directly influence their return from their investment projects brought by increasing labor costs and delays. Consequently, this decreases the attractiveness of the Philippine property market.

The shortage in manpower can be easily explained by low pay, poor benefits, and poor access to certification (PNA, 2019 C). Furthermore, construction is listed among the most dangerous industries (The Manila Times, 2014; ILO, 2018). As a result, experienced construction workers often choose to work abroad in search of higher pay and benefits offered by overseas companies (PNA, 2019 C). To address this issue, the Technical Education and Skills Development Authority (TESDA) is promoting training and upgrading of skills (Xinhua, 2019). At the same time, companies are offering higher wages to lure more workers and ensure the completion of their projects on schedule (Crismundo, 2020). While the working conditions remain unchanged in the construction and real estate sector, irrespective of the number of educated Filipinos from TESDA, they will still strive to find other paths to obtain working permissions abroad. Therefore, extensive changes are needed to upgrade the working environment thereby providing the incentives for skilled Filipinos to favor the workplace offered by their home country.

Furthermore, we have found evidence that trade openness Granger cause higher quality infrastructure. This could be brought by the increasing bilateral and multilateral agreements of the Philippines with other nations. For instance, the strengthening ties between the country and China through interchanging additional trade agreements, helps the administration to finance its infrastructure projects owing to the cheap loans provided by the Chinese government (BMI, 2018). This has promoted the country among Chinese companies wherein we can see their increasing participation in Philippine infrastructure projects (Camba, 2018). Hence, an increase of FDI from China is expected in the coming years as the cooperation increases (BMI, 2018).

To add, the establishment of the Association of Southeast Asian Nations Economic Community (AEC) that aims to tighten ASEAN integration is expected to be advantageous to the Philippines through a higher level of foreign trade, investments, and tourism (Deloitte, 2019). In line with our empirical findings, the significant cointegrating relationship between trade openness and total FDI inflows provided support for *Traditional FDI Hypothesis 4.* This is consistent with the empirical study done by Ho & Rashid (2011), which states that as the degrees of openness improves, more FDI flows into the

Philippines. This suggests that the open approach toward trade is an effective determinant in attracting general foreign investments in the long run, which is further confirmed by the Granger Causality test, showing the presence of bidirectional causality between trade openness and real estate FDI. Therefore, building a closer relationship with the country's major trade partners and enhancing the amount of bilateral trade will bring in foreign capital flows into its real estate sector. To reiterate, closer relationship between China and the Philippines has piqued the interest of Chinese citizens that manifested in the increasing number of Chinese tourist arrivals in the country and more Chinese property buyers interested in acquiring properties at a relatively cheaper property price that are expected to appreciate over time (Juwai, 2019). This is also in line with the results from Granger Causality test, showing that real estate FDI and property price Granger cause the increase in tourist arrivals. Hence, the growing investments in real estate, as well as the increasing property price, are some indicators of the profitability of the Philippine market. Therefore, business tourists who are attracted to the Philippines may visit the country to gain first-hand information to guide their investment decision. This is also supported by the empirical studies conducted by Rodríguez et. al. (2010) and Fereidouni & Al-mulali (2012). Notably, the rapid growth of FDI outflows from China to the Philippines, its participation in Belt and Road program, the ambitious public infrastructure projects, and the impressive economic growth are all reasons behind the growing interest of Chinese citizens on the Philippines as a holiday destination as well as an investment location (Juwai, 2019).

The impact of FDI in other sectors on real estate FDI is found inconsistent among the models. While model 3 showed positive relationship, although insignificant, model 4 indicated a negative and significant relationship, and in contrast to model 5 which implied a positive and significant relationship. Hence, only the latter model provided evidence for *Real Estate FDI Hypothesis 5*, stating that the presence of foreign real estate firms in the host country would attract more FDI in real estate. These mixed results can however be explained by the fact that the variable *otherfdi* comprises of FDI into all sectors except for real estate. Therefore, it is plausible that the inflows in some sectors are more likely to have a positive influence on real estate FDI, while others may have no impact. Therefore, a disaggregation of the variable *otherfdi*, consisting of FDI in different sectors, is more likely to provide better evidence of the influence of certain sectors on real estate FDI and highlight which of them are significant. In the following paragraphs, the impact of 4 selected industries (manufacturing, tourism, banking, and IT-BPM) will be discussed to further support our findings because some industries seem to have an actual impact on the growth of the real estate sector.

The growing interest of foreign manufacturers in the Philippines, especially among Chinese manufacturers, has spilled over to the industrial real estate segment. This rising interest among Chinese investors is expected to sustain the industry in the coming three years based on the closer relationship between the two economies (Bondoc J. R., 2019 D). As a result, several Chinese manufacturers have undertaken market-seeking FDI in the Philippines to capitalize on market demand. For instance,

Chinese steel company Panhua Group Co Ltd. intended to start construction of a huge integrated steel manufacturing plant in Misamis Oriental by the end of 2019, with the purpose of primarily serving the local demand and engage in the Build, Build, Build infrastructure program (Gatpolintan, 2019). Another Chinese manufacturer was also taking advantage of the rapid growth of household consumption. An Alibaba affiliate, Lazada Group, opened a warehouse in Laguna, which became the largest one in Southeast Asia (Arcibal, 2019). Hence, given the upward trend, property consultants recommend developers to modernize and build more warehouses, and develop industrial parks to meet the current and future demand (Bondoc J. R., 2019 D).

Meanwhile, the hotel industry is also benefiting from the strengthened ties with China as observed from the increasing number of Chinese tourists in the country. As a result, Chinese tourists have become a major driver of hotel occupancy and tourist spending. Property consultants are therefore recommending property developers to take advantage of this opportunity and construct more three- and four-star hotels (Bondoc J. R., 2019 E). Since our real estate failed to provide proof for the positive effect of tourism, it is evident in another study conducted by Ho & Rashid (2011) by which they have identified that tourism arrival appears to be a country-specific determinant for the Philippines in comparison to ASEAN countries, wherein an increase in the number of tourist arrivals in the Philippines will simultaneously attract and stimulate FDI inflows and implies that the country relies on its tourism industry to generate national income and sustain the economy. As pointed out earlier, economic growth is one of the fundamentals that drive FDI flows in real estate hence, the significance of the tourism sector is proven to be the major contributor to the economy, and may also indicate the indirect and positive effect of tourism on real estate FDI.

Moreover, as the banking sector becomes less restricted and liberalized, strong loan growth is expected to continue due to rising remittances and FDI inflows which then drive credit demand for consumption and investment (BMI, 2018). Therefore, more horizontal FDI is likely to be undertaken by foreign banks motivated by the market and growth opportunities in the Philippines. Since the implementation of the Republic Act 10641 in 2014, Act Allowing the Full Entry of Foreign Banks in the Philippines, 12 more foreign banks from Asia had been approved by BSP to start their operations in the Philippines (BSP, 2018 A, pp. 27-29). This is empirically proven by Moshirian & Pham (2000) that American real estate FDI was positively correlated with overseas direct investment in manufacturing and banking. As a result, FDI in the banking sector is likely to create more demand for property in real estate and further promote this sector to foreign investors. Nevertheless, the presence of foreign banks in the Philippines may also have downsides. As an example, the Industrial and Commercial Bank of China (ICBC) has recently gained permission to operate and build a branch in the Philippines, which could present Chinese investment opportunities to Filipino oligarchs that will directly benefit Chinese investors in China (Camba, 2018). The consequence of such consent is the decline in potential inflows of real estate FDI

by which the amount of capital outflow can be also used in engaging in investment projects in the Philippines while collaborating with foreign investors.

Lastly, the emerging IT–BPM sector has shown great growth potential due to the abundance of manpower with strong English language skills. Meanwhile, the increase in labor costs and real estate prices in India, one of the leading sector destinations, makes the Philippine IT-BPM industry more cost-competitive (Marketline, 2020; BMI, 2018). Therefore, IT-BPM is another locational advantage that will attract efficiency-seeking foreign MNEs with the aim of gaining access to competitive and skilled labor at lower costs. As a result, the growth of this sector along with their increasing FDI flows are expected to generate a direct effect on FDI inflows in real estate through demand and market effects. However, our empirical results among all extended Real Estate FDI models showed a negative relationship between BPO revenue and real estate FDI. In particular, model 4 confirmed the negative relationship at the 5% significance level. Thus, our findings do not support *Real Estate FDI Hypothesis 10,* concerning growth in the BPO sector will ultimately lead to growth in inward real estate FDI. This unexpected result may be explained by several factors. First, the revenue of BPO may not be the appropriate measurement in assessing its effect on real estate FDI inflows. As stated in *Real Estate FDI hypothesis 10,* we expected an indirect effect from BPO growth to real estate FDI growth thus, a direct measurement of the aggregate office demand may be more effective in capturing its positive relationship with real estate FDI. Second, there may be some overlap as this industry is also included in the variable of FDI in other sectors, which we confirmed earlier that the increase in FDI in other sectors also increases FDI in real estate. To sum up, FDI in other sectors, particularly manufacturing, tourism, banking, and IT-BPM sectors appear to be complementary to FDI in real estate rather than substitutes, by which is also evident in several empirical studies, with the exception of IT-BPM as it hasn't been widely studied yet (Hassan & Usama, 2012; Rodríguez & Bustillo, 2010; Moshirian & Pham, 2000).

In addition, model 4 provided evidence for *Real Estate FDI Hypothesis 2,* confirming the negative impact of corruption. This is in accordance with existing studies (Lee, 2011; Fereidouni, Al-mulali, & Mohammed, 2013; Eichhltz, Gugler, & Kok, 2011; Schulte, Rottke, & Pitschke, 2005) in which all argued corruption was one of the major barriers to real estate FDI, as it increases the risk and uncertainty in the foreign real estate market, while they found evidence that foreign investors preferred a more transparent real estate market in both emerging and advanced economies. Unfortunately, corruption has been a long-standing problem in the Philippines, and this prompts the current administration to implement selective strategies aimed to fight and reduce corruption. First, the utilization of media in publicizing effective enforcement cases and promoting awareness of anti-corruption drivers. Second, government agencies will be assessed in terms of corruption vulnerability to implement prevention measures in compliance with international standards. Last, to strengthen deterrence mechanisms including the development of a five-year Anti-corruption plan, enforcement, and monitoring laws and policies, among many others (NEDA, 2017, pp. 67-68). Despite putting these strategies in place, they

are unlikely to create substantial changes within a short period because corruption has been an unsolved challenge for many years. Therefore, it requires a continuous effort and commitment from the government, ensuring succeeding administrations will continue to fight corruption-related issues. Therefore, in the short-run and medium-run, overcoming other barriers are more likely to impose larger effects on the promotion of FDI.

As expected, our models provided evidence for both *Traditional FDI Hypothesis 7* and *Real Estate FDI Hypothesis 3*, confirming the positive effect of infrastructure on the aggregate FDI and real estate FDI. This is in line with empirical studies that emphasized the importance of developing well-functioning infrastructure facilities in stimulating FDI in both manufacturing and real estate and proposed that higher-quality infrastructure will enhance productivity and lower the transaction costs for foreign investors (Shivee, Khamis, & Normaz, 2015; Fereidouni & Masron, 2013; Chin, Dent, & Roberts, 2006; Gerlowski, Fung, & Ford, 1994). Nevertheless, as in the case of the Philippines, poor infrastructure may discourage foreign investment, especially when it is only ranked at 64th out of 141 countries in the Global Competitiveness Report 2019 (Marketline, 2020). Moreover, weak infrastructure connectivity imposes challenges for the flow of supply chains and therefore requiring considerable investments to connect islands and enhance the transportation time and efficiency of the import and export of goods (BMI, 2018). As the government recognized the negative consequences of having poor infrastructure, it has increased spending on infrastructure from having a GDP share of 3% in 2015 to 7% in 2022 (NEDA, 2017).

Indeed, better infrastructure may attract a larger amount of FDI flow into real estate because of the following reasons: first, it increases the value of existing and upcoming properties which will help make the real estate market even more attractive and profitable. Second, it will bring more investment options for both real estate investors and developers. For instance, the ongoing and upcoming public infrastructure projects will enable accessibility to new urban areas for commercial and residential development (Lamudi, 2020 C; Espinosa, Guarnes, & Hills, 2019). As an example, the New Manila International Airport that will be built in Bulacan would be followed by the construction of road and rail links, thereby stimulating the construction of new offices, retail, and residential buildings. This could also be owed to the interest coming from BPO companies that wish to establish a presence in this province, and take advantage of new transportation links while tapping into a large and educated workforce (Espinosa, Guarnes, & Hills, 2019). Nevertheless, the lengthy bureaucratic processes, inefficient procurement, coordination failures, and budget passing issues are preventing the realization of the country's *'Golden Age of Infrastructure'* (Deloitte, 2019). In turn, the delays in the infrastructure projects may probably interrupt the expansion strategies of investors and developers in the real estate.

The Real Estate Models have shown different results of the remittances from OFWs as a determinant to real estate FDI, wherein model 4 indicated surprisingly significant negative relationship, in contrast

to model 5 that presented positive relationship, although the coefficient was statistically insignificant, hence *Real Estate FDI Hypothesis 9* could not be confirmed. However, Tchantchane et al. (2013) and Serino (2012) have provided statistical evidence confirming the positive effect of international remittances on the Philippine economy in the long-run, wherein 1% increase in the previous year level of remittances would lead to an increase of 0.018% in GDP, which might be explained by the fact that majority of the remittances was used for private consumption, including investing in education. Meanwhile, expenditure on education implied a multiplier effect by which it leads to higher inflows of remittances and thereby to economic growth. In line with the study done by Nsiah & Fayissa (2013) who also provided robust evidence showing the positive long-run effect of remittances on economic growth for 64 countries including the Philippines, wherein the impact was much more pronounced in Asia region partly owing to the regional differences in the use of remittances. Therefore, our earlier confirmation that market size is a major determinant of real estate FDI also provides the rationale that the steady increase in OFW remittances seems to be an indirect driver of the increase in real estate FDI. Hence, given the trend of inflows of overseas remittances, the growing demand in the residential segment is likely to continue attracting a higher level of market-seeking FDI in this sector. As observed, various major companies have already set their footprint in the Philippine real estate market through their collaboration with local firms, such as the partnership formed between Mitsubishi and Ayala Land to jointly develop industrial parks and residential buildings. Similarly, Hong Kong Land and Robinsons Land Corporation have planned to develop a residential property (Bondoc J. , 2019 C). Therefore, property consultants promote the continuation of establishing joint ventures due to the bidirectional benefits, wherein foreign firms can enjoy the high yields while local firms will gain from prominent global brands, and therefore making their properties more attractive compared to local firms' (Bondoc J. , 2019 C).

10. Conclusion

The positive outlook on the Philippine real estate sector has been going on for the past 15 years as it continues to expand. The robustness of this sustained growth has been supported by healthy demand coming from its end users, who today have the means to acquire a property. This has led to the rise in property prices as well as the increase in FDI inflows in the real estate sector.

As the country's leaders and people debate about the extent of easing foreign restrictions with the sole purpose of attracting more FDI, the phenomenon seen in the property sector has opened another window of opportunity for the government to develop and promote among foreign investors. Unfortunately, there is limited literature on real estate FDI to aid their policymaking and leverage a better understanding of the determinants of real estate FDI. Therefore, this study was the first attempt to

examine the factors that drive real estate FDI in the Philippines, while contributing to a better understanding of FDI inflows in general.

By employing a quantitative approach, we were able to establish correlations between variables and validate the findings of previous empirical studies. The choice of variables was based on the discussed FDI theories and further facilitated by an extensive review of literature on traditional determinants of FDI in general as well as the limited studies concerning real estate FDI. However, to stay relevant to our research topic, we further reduced the number of variables to a set of determinants likely to be significant in explaining real estate FDI in the country, grounded on the established facts presented in our macroeconomic and industry review.

As one of the objectives of this paper is to confirm if traditional manufacturing FDI factors, which were widely examined, is also applicable to service sectors, such as the real estate, our analysis, therefore, started with regression models of the overall FDI inflows. Our findings confirmed that the highly skilled and service-oriented workforce of the Philippines is a main determinant of FDI thus, it prompted us to suggest prioritizing the development of its human capital. Moreover, we were also able to confirm that in the long run, trade liberalization contributes positively to FDI inflows, especially in developing economies such as the Philippines, which further encourages the lifting of restrictions on foreign investments. Similarly, improvements in infrastructure also demonstrated to stimulate FDI in the long run, which the current administration has already been prioritizing for the past years. Validating these findings with the real estate FDI inflow, we found out that trade openness is the main determinant, as this signals a more open and investor-friendly business climate to foreign investors. This result is further strengthened by bidirectional causality between these two variables, indicating that trade and investments mutually reinforce one another.

Moving on to our third estimation with determinants primarily based on empirical studies on real estate FDI, we found that the higher the interest rates are, which is commonly used as a proxy for financing cost, the higher levels of FDI will flow into the country's real estate sector. Although this finding contradicts previous studies, we can confirm that foreign investors are more attracted to lower property prices that appreciate over time, with the following rationale: a high interest rate will shift demand from real estate into other assets, which ultimately leads to lower real estate prices hence, explaining their investment in the country's market.

Lastly, we extended this model by adding two variables that were not examined yet by any other empirical studies. The two variables are remittances from OFWs and the growing share to GDP of the country's emerging BPO sector. Our findings were able to confirm that foreign real estate investors are attracted to the country's growing population, which is an indicator of property demand, while they do not engage if the cost and risk of property transactions are high and therefore seek relatively lower property values today that appreciate over time. These findings are indicating that FDI in Philippine

real estate is mostly driven by high future returns to capital. In contrast, it shows that the increasing FDI flows into other sectors, including BPO and real estate, do not attract real estate FDI. To our surprise, the steady growth in OFW remittances is not enough to stimulate FDI. However, we argued that this phenomenon rather drives demand in properties, which reinforces our statement that foreign real estate investors are attracted to rising demand in the market, fueling the growth in property prices, ultimately, stimulating further FDI in the sector.

We also attempted to estimate a quarterly version of this model in order to maximize the observations, but we failed to derive meaningful insights out of it due to the inconsistencies of the variables' coefficients. This confirmed that real estate investments are considered as long-term investments and therefore, they are not vulnerable to short-term fluctuations. However, it is still worth mentioning that an increase in FDI inflows into other sectors is followed by the rising FDI levels in the real estate sector, as the entry of new foreign firms is also associated with significant additional demand in properties, further strengthening our claim that market size is the main determinant of real estate FDI.

We strongly believe that our findings filled the gaps in the literature and provided a narrative in a different context. We were able to provide evidence that despite the relevance of traditional FDI determinants on real estate FDI, both industry- and country-specific analyses should also be done and even favored in attempting to understand the phenomenon in a certain real estate market.

Our study made us realize that indeed, the investment packages and generous incentives currently being offered to foreign investors by the Philippine economy attract and sustain its FDI levels hence, it should continue considering further lifting restrictions. However, these FDI promotion activities should not deviate its attention from developing its strengths, which lies in its people. Since foreign real estate investors are strongly motivated by high capital returns, the government should therefore ensure the sustainability of the growth in market demand, which is mainly driven by its population growth. However, the caveat is it has to safeguard the ability of its people to purchase their own properties despite the increasing real estate prices.

Lastly, we are optimistic that our findings will add value and depth into the discussion revolving around the prospect of reforms that would ease restrictions on foreign investments, especially land ownership. Although the purpose of such reform is to stimulate FDI and support economic growth, we still believe that careful consideration must be given to the associated negative effects on Philippine society. We, therefore, suggest not to lose sight on the main goal of attracting FDI in the first place, which is not only to provide foreign companies another avenue of growth, but rather to absorb spillover effects from such investments that will help develop the competitiveness of its labor force, which is its comparative advantage, and ultimately, promote inclusive growth along with the country's robust economic progress, without compromising every Filipino's dream and right to own a home they can afford someday.

11. Recommendations for Further Studies

Our applied quantitative research design seeks to describe and explain the trend of inward FDI to the Philippine market, particularly the real estate sector based on a set of established hypotheses. However, the factors that give rise to this trend cannot be completely understood by simply measuring them with statistical numbers and without any reference to local experiential knowledge. As a result, we acknowledge the limitations it imposes on our interpretation of empirical output and concluding remarks. Moreover, as we have already raised earlier, our study suffers from the issue of data availability that was exhibited in our sample period and the inability to include some variables such as the measurement of the impact of POGOs' presence. Second, the short sample period inhibited us from performing VAR and VEC tests for some real estate FDI models due to the omissions of time periods in our sample that further shortened it. Third, even though VAR regressions were performed successfully, they suffered from autocorrelation and did not satisfy stability condition thus, they violate the assumptions, making our VAR models unreliable. Lastly, the quantitative research is useful to predict future development in the flows of real estate FDI, whereas the downside is the empirical model cannot account for unpredictable events that may occur in the future, such as pandemics like COVID-19, hence the predictions would be worthless and for this reason, forecasting is chosen to be excluded in the paper.

Therefore, for further studies, we recommend employing a qualitative research method to mitigate the limitations present in our quantitative analysis, which would then allow an exploratory approach and discover in-depth explanations behind the phenomenon of growing foreign investors entering the Philippine real estate market. By applying a triangulation approach, future studies will have more informed development of hypotheses and gain a deeper understanding of the context of our analysis and results. In this study, we have realized that a longer period of sample is needed to fully investigate the relationship of real estate FDI and its determinants. Unfortunately, the data that is available today is not sufficient enough to allow us to pursue this objective. Given that the availability of data on FDI, real estate markets, and other determinants in the Philippines gradually increases over time, future research concerning FDI in real estate may take the results of this study as a starting point and benefit from a better understanding of the process and phenomenon we attempted to estimate.

Moreover, a disaggregated data for various types of properties such as residential, commercial and industrial will prove useful especially in the case of the Philippines as we have observed that an increase in the demand of commercial and industrial properties causes a multiplicative effect on the demand for residential properties to house the workers of the newly established companies and factories nearby. We suggest looking into the temporal ordering of these segments. It would also be worthwhile to examine other determinants mentioned in our literature review as they may turn out to be a significant factor. For instance, labor cost turned out to be insignificant with negative effect shown in the Real

Estate FDI Models. Therefore, it will be relevant to test whether the high degree of skilled labor force can be a determinant to inward FDI, in particular real estate. Moreover, the supply of qualified workers in the real estate sector may also be relevant because as discussed, the shortage in skilled construction workers may become a substantial problem as it could constrain the growth and investment opportunities in the country. Moreover, the degree of regulatory restrictions can be another potential determinant because as aforementioned, lower investment barriers will encourage more foreign investors to enter the market. Finally, geographical and cultural distance may be another significant determinant, owing to the fact that large part of the FDI flows originated from South Korea, Japan, Singapore, China and the US. Therefore, the result may be essential for policymakers to design and promote FDI reforms and strategies to attract investment and capital from these countries. Lastly, it is suggested to use disaggregate data of FDI inflows by sectors to further explore the impact of each on real estate FDI.

As we have pointed out earlier, it would be beneficial and complementary to conduct a firm-level analysis to have a better understanding of their decision making, investment location choices, motivations and whether spillover effects do flow from foreign MNEs to local firms. At the same time, the use of panel data with time series will provide future studies a larger number of data points, higher degrees of freedom, and reduce the collinearity among independent variables.

Lastly, we believe that our paper would inspire future studies that aim to examine the spillovers of the growing BPO sector in other countries such as India, Mexico, Brazil, and Thailand in their respective real estate industry. It would also be interesting to study if there are also spillovers into the real estate market of countries that also receive high remittances such as in India, China, Mexico, and Egypt.

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13. Appendix

13.1 List of Abbreviations

ADF	Augmented Dickey-Fuller
AIC	Akaike's Information Criterion
ASEAN	Association of Southeast Asian Nations
ASPBI	Annual Survey of Philippine Business and Industry
BIC	Bayesian Information Criterion
BLUE	Best Linear Unbiased Estimator
BOI	The Board of Investments
BOP	Balance of Payments
BPO	Business Process Outsourcing
BSP	Bangko Sentral ng Pilipinas
CBD	Central Business District
CES	Consumers Expectations Survey
ECM	Error Correction Model
F&B	Food & Beverage
FDI	Foreign Direct Investments
FGLS	Feasible Generalized Least Sqaures
FIES	Family Income and Expenditure Survey
FPE	Final Prediction Error Criterion
GDP	Gross Domestic Product
HMT	Hong Kong, Macao Taiwan
HQIC	Hannan–Quinn information criterion
IBPAP	IT & Business Process Association
IPA	Investment Promotion Agencies
IT-BPM	Information Technology and Business Process Management
LM	Lagrange multiplier
LR	Likelihood Ratio
MENA	Middle East and North Africa Region
NAIA	Ninoy Aquino International Airport
NCR	National Capital Region
OFW	Overseas Filipino Workers
OLI	Ownership, Location, Internationalization
OLS	Ordinary Least Squares
PAGCOR	Philippine Amusement and Gaming Corporation
PEZA	Philippine Economic Zone Authority
POGO	Philippine Offshore Gaming Operator
PP	Phillips-Perron
PPP	Public-Private Partnership
PSA	Philippine Statistics Authority
PSIC	Philippines Standard Industrial Classification
SBIC	Schwarz Information Criterion
SEZ	Special Economic Zones
TESDA	Technical Education and Skills Development Authority
VAR	Vector Autoregressive Model
VECM	Vector Error Correction Model
VIF	Variance Inflation Factor